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The Etiology of Dystocia

By C. E. BASSLER, D.V.M., Greensburg, Kans.

WHEN nothing appears abnormal in either the parturient mother or the fetus, the distinction between pathological and physiological labor cannot be made arbitrarily, as it is a variable condition depending upon the relation between the combined obstacles and resistance to be overcome as opposed to the strength of the expelling force and vigor of the mother. Usually the expelling forces of the mother are greater than the resistance to birth and in this case no matter how severe the procedure may appear it must be called physiological labor. The instant that a leg fails to extend properly and protrude or the os uteri to dilate so that the expelling forces are inadequate, we have a transition from the normal to pathological labor (dystocia).

Of the above the first instance of improperly extended leg, unless corrected, develops into fetal dystocia; the second, lack of dilation of the os, is an example of maternal dystocia. A little timely assistance in the former will save much vigorous and wearisome labor for both the attendant and the patient after labor has continued a few hours. In fact, this is a common example of dystocia, easily remedied in its incipiency and difficult in certain instances after it becomes aggravated. It further illustrates the point that the veterinarian is seldom called to a case of dystocia unless there is dire need of assistance.

Any diseased condition of the fetus, excess in its bulk, or deviation from normal in its form, presentation or position may result in and is called fetal dystocia.

It is generally believed among laymen and seems to be backed by thremmatology and clinical experience that mismating (in which the sire is excessively large in certain features), or promiscuous and careless inbreeding, premature conception and domesticity are predisposing causes of dystocia. Trouble is usually expected where such conditions exist.

Maternal Dystocia

Maternal dystocia may be equally serious and is caused by some defect, or disease of the female organs or in a physiological inability on the part of the expelling forces. Personally I have handled numerous cases where the only thing lacking to prevent physiological labor was "push."

Careful feeders of valuable animals prevent the dam from receiving feed that has an extreme tendency to stimulate body growth of the fetus, thus overcoming one cause of dystocia. Veterinarians generally agree that the

influence of work on labor (parturition) is beneficial. In my own experience in a territory subject to mild, open winters where all cows, even dairy cows, are wintered and summered in the open, my record shows that pathological labor has occurred in two cows for every mare so affected. Therefore, viewing matters from my own experience, which is contradictory to that of some authorities, it would seem that work is a beneficial agent and tends to prevent the occurrence of pathological labor. In this connection, it should be impressed on the mind of the reader that this same work, if of a severe type, with straining or slipping, may be and often is the cause of abortion, with its attendant complications, in mares. However, it is self-evident that in any semi-arid country, the work animals that would be presented for treatment to a rural practitioner, would as a matter of fact be favored with hard, dry roads, light draft and secure footing. Further, the advent of the automobile has so diminished the number of driving mares that fast driving is seldom a cause of disturbances which result in abortion.

The cow may be inherently more subject to dystocia than the mare even where environment plays a small part in the etiologic factors. It seems to be agreed, however, that the closely housed dairy cow, especially in our northern states, holds first place in frequency of dystocia, while the mare is subject to the more severe forms and complications. This is especially true of nervous, pure-bred mares because they are prone to a more tumultuous or precipitate labor, often injuring themselves irreparably by tearing the uterus or the perineum and bruising the external genitalia, while at the same time killing the colt. These injuries may all happen in a very short time (one-half to one hour), in a mare, and usually when they do happen the damage is done before the obstetrist is called, while, in a similar condition, the average cow would just be getting nicely started.

An injury which could be successfully handled in a cow would, when the mare is the subject, result in peritonitis, or metritis, or what, as a usual thing, actually does happen, both (metroperitonitis) with the attendant septic infection.

Williams makes a frank statement which is worthy of endorsement and which the experience of most of us will justify when he says: "It has not been our fortune to deliver a living foal where there was an actual dystocia." This is largely due to precipitate labor and early separation of the placenta, thus removing the foal's only source of existence. The peculiar and secure attachment of the placenta to the uterus of a cow prevents death in the calf from this cause except in rare instances, difficult to be proved.

To add to the grief of the obstetrist in handling mares in tumultuous labor is the fact that their disposition usually is of such a nervous or violent nature that they have little regard either for themselves, their colt or the attendants, and often they are vicious, even although ordinarily gentle. The quiet mare, however, that will stand at command, affords an easier situation to handle than the obstinately prostrate cow in the course of parturition.

Neglect, which is the rule rather than the exception in veterinary obstetrics, aggravates any fetal dystocia though this is not necessarily true of maternal dystocia. In fact, postponement often allows time for the proper dilation of a normal uterine cervix.

The loss of fetal fluids and the close investment of the fetus by the uterus are the natural results of neglected dystocia. This condition renders any correction doubly difficult and may change the indication of a mutation to one of embryotomy. This latter is sometimes obviated by copious injections of weak antiseptic solutions (lysol or potassium permanganate) at body temperature to prevent straining and to replace the lost normal fluids.

Neglect of prolonged dystocia, as we have pointed out several times previ-

ously, is the bane of the accoucheur; but such a condition becomes greatly aggravated when it is accompanied by promiscuous and rough interference by the average owner and his neighbors prior to the veterinarian's attendance. These willing meddlers, with their dirty, rough hands and long finger nails, dirty instruments and crude methods, are a positive menace to the life of the patient and the reputation of the veterinary attendant who follows them in their unsuccessful attempts. They seldom fail to bruise, irritate or even lacerate the genitalia in every case that they attempt to treat. Let it be said here, as an admonition, that the veterinary obstetrist who accomplishes his work in the manner just described, even though effectual, is much more guilty than are laymen and he deserves nothing but condemnation. Further, he will probably find that he is more often called as a second choice to follow amateurs' attempts than if he himself used superior and more cleanly methods.

Fetal Dystocia

Fetal dystocia is considerably the most important cause of pathological labor and furnishes by far the greater number of instances. A long period of gestation, a large male, and immature female, and heavy feeding are all more or less generally accepted as causes of dystocia.

Very fat mothers and primiparae tend to have comparatively small young and if the mothers are mature and rugged, dystocia does not ordinarily result. The cause of dystocia in fat mothers is usually referable to lack of exercise and consequent flabbiness of muscle. That of primiparae is usually due to immaturity.

Multiparity is a normal process in multiparous animals and, within the usual limits, the greater the number of fetuses the less is the danger of dystocia, because they are relatively smaller.

In uniparous animals the case is different, because instead of the fetuses being arranged in the uterine cornua in succession like the multipara, they are in the body and same horn in close contact, often in the same chorion. Arranged in this manner, even though one or both are usually smaller, entanglements and simultaneous presentations are frequent.

Inanition as well as other causes of weakness usually occasion deficient expulsive effort and, therefore, tend to dystocia from the slightest provocation.

Tumultuous labor may crowd the fetus so violently, before a normal os uteri may properly dilate, that a deviation in position of the fetus is caused and dystocia results.

Tardy dilation of the os and canal is observed from actual physical aberration on the part of the mother, but may often be considered as a counterpart to tumultuous labor. This combination of circumstances is very apt to result in uterine and vaginal rents and contusions, as well as death of the fetus.

Lack of exercise and close confinement of pregnant animals, during the advanced stages of pregnancy, is productive of dystocia. A general lack of tone always results from such neglect, and deficiency in tone and strength of the uterine muscles and other parts required in the expulsive effort, also certainly follows. The muscles are flabby and soft and cannot continue sustained effort. A sheer lack of push is evident here after a reasonable effort as is initially and continuously true in a case of inanition.

A rather small percentage of cases of fetal dystocia are due to dropsy of the placental membranes and errors in development.

Many believe that unnatural positions at certain periods of gestation enhance the liability to dystocia. I have watched, as closely as is usually possible under ordinary practice conditions, to observe the truth of this theory. So far I have failed to observe one case of dystocia or an abortion affecting a fetus that was being carried during the time of a severe attack of indigestion. This has been

my experience and is recited as such.

All of the various causes listed above have been advanced from time to time as causes of dystocia. Some are very far fetched and some are concrete facts; such as, for example, monsters and influences stimulating excess of size. Some causes are not yet sufficiently demonstrated to prove their effects. Those tending to weaken the mother are very important and should be seriously considered. The reader will arrive at his own conclusions regarding many theories here and elsewhere as his experience ripens, even though he might have difficulty in substantiating his views before an intelligent audience.

Active Principle Therapy for Veterinarians

By DR. FRANK B. KIRBY, Chicago, Ill.

THE more or less rapid progress in the scientific adaptation of the remedial properties of our botanical materia medica is marked by distinct milestones. Beginning with crude drugs, then with infusions, tinctures, elixirs, fluid extracts and their standardization, we reach the climax in the use of the chemically pure active principle. Each presents advantages over the preceding and each in its turn was the best of its day.

The veterinary profession cannot and does not rely on the successes of the past except as stepping stones to meet present-day requirements, therefore the growing popularity of active principles.

About the year 1850 Prof. Adolph Burggraeve, of the University of Ghent, began the use of the active principles of plants in place of the then commonly used galenical preparations of those plants. As a result of pure evolution from good to better, from better to best, we find that galenical preparations are today but seldom depended upon where prompt, definite and certain results are demanded. Possibly the first instrument purchased by the student of medicine is a hypodermic syringe for the use of active principles, not that they should be or are used only in this way, but to meet emergencies they alone are relied on for quick and certain action.

The same confidence that obtains in the use of active principles hydodermically may be had when these drugs are given *per os*. Results proved, it remains to fulfill the first principle of therapeutics—do no harm. A plant structure is predetermined by heredity, its chemistry by environment. The amount, variety and relation of its medicinally active principles depend on the barometer, winds, amount of moisture or sunshine and temperature during the period of active growth, and develop for the uses of the plant physiology and not for any use man may want to make of them. Quinin is more abundant in the bark on the shady side of the tree; hence, the economic principle of tying moss on the unshaded side to increase the total yield.

This brings us to the question of therapeutic antagonism. Jaborandi contains pilocarpin, a sudorific; also jaborin with an opposite effect. Gelsemium contains gelseminin comparable to cicutin, a depressant; also gelisemin, an excitant of strychnin-like action.

Even standardized galenicals have no respect for other than the essential alkaloid. Fluid extract of pilocarpus though containing pilocarpin in standard amount may be inert from therapeutic neutralization by the jaborin therein or even anhidrotic from excess of jaborin. The seriousness of this seldom-acknowledged lapse in our pharmaceutical science is offset by the fact that the profession now invariably depends on the chemically pure alkaloid pilocarpin. Therefore, where available, single alkaloids are to be preferred to tinctures or fluid extracts of their corresponding plant origin.

The basic foundation of active principle therapy rests on this platform which time has not yet improved—*The smallest possible quantity of the best obtainable means to produce a desired therapeutic result quickly.* In the ultimate analysis

of our botanic materia medica we find plants contain fiber (cellulose), coloring matter, extractive, sugars, inorganic salts, fats, acids and active principles. All but the latter are inactive, inert and therefore therapeutically worthless. The question is, why use the inactive elements?

Chemistry has not, however, developed far enough to deliver the pure active principle of all medicinally active plants, either from lack of knowledge, from too severe requirements or from absolute physical impossibility. We have not yet made available the active principle of ergot, digitalis, echinacea, buchu, viburnum, cactus, cascara and others. They may exist as chemical curiosities but are not yet of practical use. This but strengthens the position of the desirability of active principles and lends incentive to advanced work along lines that will cause the isolation and purification of more of these agents.

Here, too, is where physiologic standardization is of value and necessary as no definite chemical represents the therapeutic possibility of these remedial plants. But standardization of galenicals is a failure in that it gives a false sense of security having reference to the day of manufacture and *no time limit*. This is appreciated when we consider that chemical reactions take place in solution and, recalling the ideal conditions for this presented by tinctures and fluid extracts, we understand their frequent failure to produce results.

The drugs in the above list and others in their class must be used, and it, therefore, resolves itself into the use of concentrations or solid extracts. It is generally accepted that the termination "ine" means an alkaloid while "in" means a glucoside, neutral principle, resin or a camphor. In line with definiteness therefore the "oid" termination covers those combinations of proximate principles which do not permit of separation (or doing so), yet define a therapeutic activity reasonably accurate; e. g., cactoid (cactus), hamameloid (hamamelis), and echinacoid (echinacea). We have, however, accepted the more recent nomenclature and dropped the "e" from alkaloids.

Our Pharmacology Remains the Same.

In accepting active principle therapeutics there is nothing to change but the form of the remedial agent. The pharmacology is identical; in fact, our physiological tests are all made on active principles which until recently have been smothered in a heterogeneous mixture called tinctures.

Belladonna is effective because of its atropin, aconite because of aconitin, pilocarpus because of pilocarpin. Or, to state it differently, atropin, aconitin and pilocarpin are the definite, permanent therapeutic entities, that are certain and prompt in action.

For fever we discard tincture of aconite or veratrum with their uncertainties for aconitin or veratrin. Heart tonics remain the same — digitalin, strophanthin, spartein, cactoid (cactus), and strychnin. Gastrointestinal medication is distinctly advanced by arecolin vs. areca nut. The central nervous system is better impressed by strychnin than nux vomica. Pain is relieved by morphin and motor excitement by lobelin.

Their Practical Application.

After sixty-five years test the dictum of Burggraeve stands approved: "To acute disease oppose acute treatment; to chronic disease, chronic treatment." While preventive medicine is ideal its general acceptance will be slower for the veterinarian than for human medicine. This may be questioned. But this emphasizes the advisability of early treatment which further brings out the greater value of active principles. The little dose frequently repeated in the first stage of the inflammations — pleurisy, peritonitis, pneumonia, synovitis will prevent the subsequent stages of diapedesis and venous stasis. In the period of active congestion we decongest by increasing the propelling force and decreasing the resistance. Cardiac stimulation produces the former and vascular relaxation the latter; whereas the amount of blood is constant, its excess in one place signifies a corresponding anemia elsewhere—witness the chill in beginning pneumonia. The indication is rapid equalization of circulation.

But this frequency of dose does not mean a waste of time as might at first be thought. A temperature of 102° to 104° F. rapidly oxidizes, not only the

tissues but applied remedies and, therefore, doses at ten minute intervals will not produce toxic action. The response of the body is frequently such that three or four doses within one-half hour makes for a decided change toward the normal. This effect is then held by the less frequent dose possibly at hourly intervals.

A strong feature of active principle medicine is the forced selection of pathologic conditions for treatment at the expense of named diseases. This adds much to the success of active principles by favoring a close diagnosis. Further, an added feature in their favor is the toxic or pathologic action if the remedy selected is not indicated—it compels accuracy of remedy, diagnosis and response, and offers the only real check against dangerous toxicity.

Alkaloid, glucosides, resins, etc., do not offer a "best remedy" for pneumonia, colic, laminitis. While recognizing some basic principles in all treatment such as a thorough cleaning out of the intestinal tract, free incision and drainage for abscesses, and all the indicated hygienic measures with reference to food, ventilation, temperature and rest, active principle therapy does not present any "sure cures" nor shot-gun polypharmacy.

Remedies should be given to produce certain well defined results clearly seen by the attendant and expected. This brings up dosage which is reduced to the simple formula, *quantum sufficit:* in other words, *enough.* Because a one-fourth grain dose relieved pain we cannot stop at a one-fourth grain dose for the next apparently similar pain if a three-fourths grain dose is necessary. Neither should we hesitate at three times the dose of a febrifuge which succeeded in one case if three times that dose be necessary.

The intelligent control of any pathological condition for which your client calls you depends upon a clear picture of the present condition and its possibilities; i. e., prognosis. Therefore, it is well to prepare for the coöperation of the owner in meeting emergencies. Thus pleurisy may develop cough, diarrhea may precede intesinal prolapse, and remedies should be left to tide over these symptoms. Such may be taken up at the next visit if the danger has passed.

The economy of the system is thus seen. Besides saving the entire cost of alcohol which enters into the composition of all tinctures, only enough doses are given "to produce the desired therapeutic result"; more are unnecessary if not dangerous.

Meeting Your Client's Objections.

As in human medicine, many cannot get away from the mental impression that a large bottle of colored medicine is more effective than a pill or tablet, especially if the taste is bad. Challenge your client to test personally a granule (canine dose), of glonoin or aconitin from your emergency bag. Either is harmless yet demonstrative of actual value. For your worse opponents and the less intelligent make up a sixteen ounce bottle of water colored as desired, flavored if necessary, adding enough tablets to make the required dose. If one-half ounce is the dose thirty-two tablets give an extemporaneous and accurate solution.

The successes of active principle medicine depend on the mastering of but a few principles. We shall, in subsequent discussions, endeavor to bring out the physiological action of each remedy discussed and where known or possible, the toxic or pathological action also. It must be remembered that not all active principles show toxicity, but it does not necessarily follow as assumed by some pharmacologists that therefore such products are useless; witness cactus, echinacea and thuja.

How to Begin Active Principle Medication.

The way to begin is by procuring a few remedies for thorough study and demonstration, looking on each patient as a chance to "make good" both by relief to the patient and added knowledge to yourself.

It is no mere coincidence that our textbooks on therapeutics begin on aconite, while our books on both surgery and pathology start with inflammation. Therefore, and because of the frequency of inflammation, the way to begin is to master thoroughly both aconite and inflammation.

Three words mark the wonderful

progress of the Japanese, "adopt, adapt, adept." You, as a progressive veterinarian, cannot do better than *adopt* the active principles which have proved so successful for the medical profession, *adapt* them to the peculiar requirements of your profession and become *adept* in their use.

As a professional man the veterinarian and student of comparative medicine must be an expert with the instruments he handles, especially "the therapeutic arms of precision" known as active principles.

It is probably true that a majority of the conditions for which you are called begin as an inflammation; pleurisy is pleuritis, pneumonia is a pneumonitis and others are equally familiar—peritonitis, vaginitis, synovitis. A derangement of the circulatory equilibrium is present in all of them calling for aconitin, veratrin or gelseminin. These are the three best febrifuges.

Text books on practice thoroughly discuss treatment, but it may not be out of place to strengthen our platform and reinforce some well known facts.

To repeat our injunction, the initial intestinal flushing is desirable as preliminary to intestinal cleanliness reducing the amount of toxins to be absorbed. We will, however, dismiss hygienic measures by recalling the importance of hydrotherapy—water internally and externally, good air and intelligent feeding.

A thorough understanding of the principles of alkaloidal medication will follow a clear appreciation of aconitin. The application of any other remedy that may be indicated logically follows. In other words, no special study is necessary to administer q. s. bryonin in a pleuritic case in which pain progresses, though aconitin has been used.

For convenience, we start with aconitin hydrobromid, gr. 1-72, as the large animal dose and gr. 1-800 as the small animal dose, giving one dose at ten minute intervals preferably by the mouth in aqueous solution. The frequency of dose depends on the degree of fever and hence the degree of oxidation—ten minute intervals for, say 106 degrees F. and half-hourly for 104 degrees F. As the desired effect is obtained, lengthen the period between doses until you just maintain this effect.

No selection of remedies is here made, as each man will practice according to his own methods and the peculiar conditions he is called upon to meet.

A large assortment is not necessary, though it may be desirable to be well equipped to meet the exigencies of emergencies as they arise. Far better carry one or several active principles which may be used once a month only, than to need that remedy and have it reposing on the shelf some miles back in your office. In these days of competition the man who handles acute conditions with intelligence, proving himself an adept, will attain success sooner than his competitor, less fully equipped mentally and otherwise.

Treat the pathological condition, in other words, the patient, and *never mind the name of the disease.*

(To be continued.)

Pride depends on the consciousness of self-applause; vanity is fed by the applause of others. Pride is a reserved and lofty passion, which disdains those external distinctions that vanity eagerly grasps. The proud man sees, in his own mind, the source of his own dignity; which, as he well knows, can be neither increased nor diminished by any acts except those which proceed solely from himself. The vain man, restless, insatiable, and always craving after the admiration of his contemporaries, must naturally make great account of those external marks, those visible tokens, which, whether they be decorations or titles, strike directly on the senses, and thus captivate the vulgar, to whose understandings they are immediately obvious. This, therefore, being the great distinction, that pride looks within, while vanity looks without, it is clear that when a man values himself for a rank which he inherited by chance, without exertion, and without merit, it is a proof that such a man has no sense of real dignity, no idea of what that is in which alone all greatness consists.—Henry Thomas Buckle.

Educating vs. Prosecuting Dairymen to Improve the Milk Supply of Cities

By DR. C. L. BABCOCK. Springfield, Ohio
City Veterinarian and Dairy Food Inspector

I WAS very much interested in the article of Dr. Hubert Shull in the October number of the JOURNAL. His ideas of what the veterinarian can do in the daily practice by advice to the dairyman and stock raisers certainly would be appreciated by most of the men in that business. In the section where I am a dairy inspector, milk production is a secondary consideration on most farms. Our producers milk cows, because each month they get their check and it is a sure means of ready cash to the farmer. However, I think I have as fine a group of men to deal with as there can be found anywhere in the United States. I try to be a coöperating inspector, rather than a coercive one and nearly all my producers assist materially by coöperating with me to get better milk, and better methods. During the very busy season I do not hamper their harvest work by taking their time to harangue them on any scientific theories. I do not harass them when things go wrong at the dairy; if I must make a special call on them I simply tell them what has gone wrong with the milk or equipment, and impress upon them the necessity of getting things right and also tell them that I am drawing a salary to help them make it right and that I am willing to stick to them until it is right, and they have never yet turned me down.

I am not allowed to practice veterinary medicine except as to city horses, and if, in an emergency, a man cannot get his veterinarian, then I am allowed to go, but collect no fees. I have about 350 dairies to call on twice per year, the city charging no fee for inspection. The ordinance providing for an inspection fee was repealed the first of 1917 and it has been a wonderful help, too, in the matter of getting into the good graces of the producer. I score all dairies and leave a copy of the score with Mr. Producer, and try to impress upon him the necessity of sanitation and methods in the production of milk, the feeding and watering, best breeds of cattle and general practices of keeping, cooling and transporting of milk. In fact, I emphasize at all times the most necessary things for production of good milk with the equipment at hand. I have no hard, fast rules and regulations for each man to follow, as every farm does not have the same equipment, but I do try to standardize the methods of production. I have seen some of my worst equipped dairies produce better milk, at times, than some of my best equipped dairies, because the poorly equipped dairies used the best methods with their poor equipment, and the best equipped dairies used slipshod, hurried methods with their good equipment and consequently produced a rather dirty milk with a high bacterial count.

I have been doing all my own veterinary and milk bacteriology and chemical milk analysis and keep a record of such at all times. I do chemical and bacterial analysis of the milk from the farms and often have a number of my milk producers in the laboratory with me showing them the technic of such work, making microscopic slides for, and pointing out to them the germs which do them the most damage. There are five practising veterinarians in the city with whom I coöperate at all times, and ten in the county districts with whom I also coöperate, besides the county agent and the federal veterinarians on hog cholera control work and all state inspectors who come into this territory. Now then, if the same veterinarians would coöperate with

me at all times, by insisting on the isolation of all cases of garget or mammitis and febrile conditions as well as the sanitary surroundings or report to me such cases and allow me to assist them by a follow-up system, in a diplomatic way, we could gain even better results in the production of milk. Veterinarians, as a rule, seem to be afraid that they will lose a client when they offer good sound advice, and in my estimation, the veterinarian is the only one qualified to give this advice about cattle and dairies if he would only do so. The county agents are not slow with any advice they have and are often asked to give it over and over again. With the diseases that are transmitted in milk, the timely advice of the veterinarian, may, in some instances avoid an epidemic.

The dairy inspector, in most instances, is a busy man and any aid a veterinarian in daily practice could give would be greatly appreciated and always acceptable, and if the inspector is really interested in his work and not so much interested in his salary, he will always coöperate in any epizootic of any kind and assist a brother in autopsies and in his daily work. So altogether now, Brother Veterinarians, Inspectors and County Agents, let us get together, or in other words, let us coöperate for better stock, better feeds, better sanitary conditions, and last, but not least, better milk at all times.

Volvulus, Intussusception and Hernia Through the Omentum in the Horse and New Born Foal*

By J. F. DeVINE, D.V.S., Goshen, N. Y.

IT is possible that some of the older practitioners are wondering why I have chosen this subject unless I have something new to present in the way of treatment or relief for these very serious conditions. In the various works and articles in which the subject is touched on, let the treatment be what it may, it is given in a rather perfunctory manner, and I personally question if any of the treatments or handlings prescribed where there is true volvulus or hernia of the omentum has ever relieved a single case in the adult horse. I will concede that there probably have been cases of what might be termed semi-torsion of the larger bowel that have been relieved by the antics of the suffering animal and by manual manipulation, special rolling of the animal, etc. The unfortunate part of it is that I do not feel capable of even suggesting treatment of any merit other than the aid in diagnosis and mitigation of the acute suffering that these conditions occasion.

I now come to my excuse for presenting this subject to you and it is possible, with the exception of the younger men, it may hold but little interest for you.

The *diagnosis* of these conditions is the phase of the subject that I am most interested in. All authors that I have read, even such capable men as contributed to the recent work "Colics and Their Treatment," pass rather lightly by the diagnosis of these troubles. One particularly able writer who contributed to the work mentioned, states he has "never been able to find these conditions except at the post mortem examination."

My great interest in acute gastro-intestinal troubles of the horse, accompanied as they are with more or less severe pain, dates back to the time before and during my student days. My interest in the horse, sick

*Read at the A. V. M. A. meeting held at Kansas City, August 20 to 24, 1917.

or well, I think was surely prenatal and whenever there was a case of so-called colic in the neighborhood and I heard of it, even when a boy, it had the same fascination for me that a fire or dance had for some others, and while I, of course, knew nothing of the physiology or pathology in such cases, there was one thing quite plain and that was, the poor animal's suffering in most cases was almost unbearable and the cases terminating in death, often, to the lay mind, seemed as if they died purely from the shock of pain which, of course, is literally true in some cases. I then and there decided that if I could ever become a veterinarian I would do my best to lessen this awful suffering in our noble animal.

Of course, it is now common knowledge that many of these acute digestive troubles are errors in feeding and can be positively avoided. When I entered the veterinary college and became legitimately associated with the practice of veterinary medicine and served as assistant to other practitioners, I established a custom which is still carried out at my office, and that is that when I received a call and found it to be the so-called colic, I never left such a case until the animal had recovered or died. I further established a practice, which I have since continued, and that is in every animal that dies under our care, where there is a question of diagnosis, a post mortem examination is always made if possible; in fact, with the exception of outbreaks of contagious diseases where animals die in numbers from some particular scourge, I think I can safely say we autopsy ninety per cent of all cases that die. This is made rather convenient in my locality, where rendering factories are accessible or the carcass easily disposed of on the farm.

The fact that I was privileged to watch these cases for others and afterwards for myself with the resultant post mortem examinations where the cases terminated fatally, accentuated my interest. With the advent of the stomach tube and the knowledge that this instrument, the trocar, stimulants, enemas and mild cathartics, particularly salines, frequently repeated, were in niney-five per cent of the cases far superior to narcotics and anodynes, which mask the symptoms rather than relieve the cause, gave me hope of the fulfillment of my early wishes.

My next desire was to differentiate if possible the positively fatal cases from those that had the chance of living, with good, intelligent care and medication. By careful observation of the pulse and temperature, manual examination per rectum and close scrutiny of every movement of the suffering animal, I began to feel that I could determine with reasonable accuracy the cases that were purely intestinal rather than gastric; and further, that where the client would give us an early opportunity to treat such cases, all could be saved excepting those of a serious organic nature, and, finally, that I could diagnose and prognose in this type of case with reasonable accuracy.

I have no admiration, in fact, no respect, for the "foreflusher," the positive, offhanded diagnostician; but I have admiration for a capable veterinarian who by careful observation can make a rather positive diagnosis that a condition not amenable to treatment exists, and who can prepare his client for the probable fatal result of a case and does so honestly, gentlemanly and courteously, explaining to him that the case presents certain characteristics which to him would indicate that it would terminate fatally and that if it be the owner's desire, he would be pleased to have consultation. After he has done this and death follows and he can show to those concerned by post mortem examination the proof of his diagnosis, there is but little danger of the loss of such a case causing the loss of a client.

Before reciting the symptoms on which I base my diagnosis I should like to state publicly that whatever my interest on this subject may have been, I doubt if I would have been so persistent and patient in my early life

in watching and posting these cases had it not been for the encouragement given me by the late Roscoe R. Bell, whose memory as a preceptor I shall always cherish with the greatest respect. I had the great privilege of acting as his assistant in the year of 1899 and during that time I ventured the diagnosis of volvulus of the small intestine or hernia through the omentum in three cases and intussusception in two others. His unfeigned delight at each of the post mortems and his good counsel would have been inspiring to one even less enthusiastic than I.

I kept careful record of this kind of cases until I had posted twenty-nine cases of twist in the small intestine, three of the larger bowel, three of invagination of the small intestine through the omentum in the adult horse and eight cases of invagination of the small intestine within itself and one into the cecum of the newborn colt. Of late, work of this character has been entrusted to assistants, as I have not felt I could spare the time. We, of course, continue to treat these forms of colic the same as do all practitioners, and I occasionally talk with my assistants about such cases, but all information they have gathered seems to agree with the records I had accumulated up to within a few years ago, and which I will here give you without further explanation, excepting to say that I was prompted to prepare this short paper due to the fact that I recently gave personal attention to a valuable colt that one of my assistants was treating at one of our stock farms. The owner, being a particular friend and very desirous of saving the colt if possible, asked me to take charge of the case; so I decided to lay other work aside and do what I could. The colt died on the third day from a severe invagination and, thinking that that part of the bowel might be of interest to someone here, I brought it with me.

To get to the point, let us imagine ourselves in the presence of a horse suffering from volvulus, let it be due either to a twist of the bowels upon themselves, or a hernia of a part of the intestine through the omentum or a case of invagination, the symptoms are practically the same excepting in the two former conditions are more intensified and death ensues earlier than in the latter. The symptoms presented upon our arrival will depend greatly upon how long the animal has been suffering. Say the attendant tells us that the animal was taken some thirty minutes ago with sudden and severe colicky pains, occasional straining accompanied with small passages of fecal matter, lying down, jumping up and when down endeavoring to roll on the back. If we watch the animal a few minutes we may get this information ourselves, providing we are not satisfied with the history given us by those in charge. Three things that will arouse our suspicions if present are: the straining, the small amount of feces that are passed, and particularly the desire of the animal to get against the siding or corner of the stall where he can remain lying for a time on his back.

It is true that in acute spasmodic colic, particularly of an exhaustive or nervous nature, such as we see in the trotter, hunter, thoroughbred or show horses after an excitement, workout, or race, or in case of calculus, we observe evidence of these very sharp pains and confusing symptoms that last a short time; therefore, it is quite natural that we may administer any favorite colic remedy, chloral, cannabis, morphin, etc., and we may get what appears to be pretty fair results from the first dose. The animal becomes quieter or possibly real quiet for a few minutes; in the case of a large dose of chloral hydrate being given relief may last from fifteen minutes to half an hour from the time the drug begins to take effect, but this will soon give way to uneasiness again. If we attempt further quieting medication we will find that this time the action of our drug is not so well marked. The animal continues to grow worse and all symptoms are ag-

gravated. He will lie on his back for a few minutes, jump up, walk hurriedly around in the stall a few times, stop, back up on the corner, swing his head up and down three or four times, breathe short, fast and heavily and with a semi-grunt at each expiration; point with his nose rather low in the flank, holding it there perhaps some minutes at a time, and then resume his march of pain. He now begins to perspire; this is apt to increase until his entire body is so wet that the perspiration drips. After a time his body becomes cold and clammy. He may or may not bloat slightly. In case gas does accumulate, tapping causes easiness for a time. He stretches at times throughout the attack, as do animals that are suffering from other obstructions of the bowels; that is, assuming a position like a trained hackney does when standing to be admired. These symptoms are observable anywhere from one to four hours from the beginning of the attack, providing of course that one of the conditions which we are discussing is present. We are all aware that many a mild case of abdominal pain is later complicated by torsion of the intestines, due to the horse's violent rolling. Such cases would naturally not have the symptoms of torsion or volvulus until we had this condition to deal with.

After we have observed some or most of these symptoms the treatment is only pretentious; oil, enemas, anodynes and anti-spasmodics are indicated and it is well to give them even though we think the case fatal; it will aid to retain the good graces of our client.

The animal's pulse now becomes very hard and fast; the temperature begins to rise from two to five degrees; we also note that there is less inclination to lie down, probably due to a complicating peritonitis, but he walks instead blindly around and around in the stall, knocking his head in each corner until it is painfully abraided. The abdomen is tucked up, the countenance drawn and respiration is short and painful. We also note about this time a characteristic symptom which is quite constant, and that is an occasional neigh at familiar sounds, such as footsteps, opening or closing of a door, or the moving of his mate. Should you now through a humane act remove him to a roomy box stall or paddock, he will trot about neighing occasionally, stopping now and then for a few seconds, swaying as if he would fall, suddenly starting off again until finally, from extreme pain and exhaustion, he is compelled to fall. However, it is not uncommon to see them regain their feet and continue their insane perambulation after many falls, each one appearing to be the last. Neither is it uncommon to see them have periods of apparent relief just before death, in case they do not die of nervous shock before the bowel has become completely strangulated, cold, and on the verge of gangrene.

To see all this has consumed several hours but we can now make our diagnosis which we have been predicting all along and can feel pretty safe in telling our client that death will ensue in from twelve to twenty-four hours. Death always occurs earlier in volvulus than in intussusception, and in the case of the former the duration will depend largely on the amount of intestine involved; the greater the surface strangulated, the sooner it causes death.

The points in diagnosis, therefore, I wish to emphasize are:

1st, the early acute pain; 2nd, the great desire to lie on the back; 3rd, frequent passage of small amounts of feces; 4th, the violent straining that we ofttimes see in impaction of the colon without this condition being present, which may be determined by rectal examination; 5th, the distressed condition and lack of pronounced symptoms; 6th, the apparent inertness of any drug given after the effect of the first dose or two wears away; 7th, the constancy of the acute pain, being fully as acute as in intestinal calculus, the latter, however, having periods of intermission of pain; 8th, the hard pulse, the distressed look and the high

temperature of a case of peritonitis with the lack of cautiousness in lying down, rather a careless or violent throwing of himself; 9th, backing up in the corner and swaying the head up and down; 10th, occasional neighing as he nears death; 11th, the growing tendency as the case advances to continue walking, and the peculiar position assumed while walking, with the appearance that the hind parts are going faster than the front, a sort of doubling up, so to speak, which can be likened to the position a man assumes when he is in acute abdominal pain and attempts to walk; last, the almost pathognomonic symptom when associated with those recited, that is, the holding of the nose against the abdomen.

What I have to say relative to these conditions in the newborn foal must surely be directed at the younger man to avoid being accused of egotism; and that is, it is my judgment that intussusception is not diagnosed in the young foal with nearly the frequency that it exists, since it is rather a frequent occurrence in the baby colt and the least bit of colicky pain in these little fellows always gives me considerable concern, and where the case continues for any length of time and I fail to find a scrotal hernia, I immediately suspect intussusception.

The best treatment that I know of in these cases is plenty of hot water forced high in the bowel per rectum. It is still better if a liberal supply of linseed or olive oil has been added. I cannot see how cathartics, other than as a lubricant, can be of any value whatever, but rather must aggravate the condition since in my experience all invagination or telescoping has been antero-posterior, that is, the excessive peristalsis has invaginated a part posterior to it. We may have rather extensive invagination and the symptoms presented be comparatively mild and the colt live for two or three days, as was the case in the specimen I here show you, but let the symptoms be ever so mild we notice the characteristic desire of the little fellow to lie on his back.

There are two things, therefore, which I would suggest to the young practitioner. First, medicate small colts with great caution; never give over a dram or so of any drug or even oil at a time, when they are suffering with pain, because if you do and you give enough of it, you are apt to cause mechanical pneumonia.

The other thing is, in abdominal pain of the colt, if you have eliminated other trouble, to suspect invagination and treat the colt by giving liberal enemas with a good bit of force, having the colt's hind parts held up so he is standing on his head, so to speak, and insert a stomach tube or a soft rubber catheter per rectum just as far as you possibly can get it, but of course with great caution, dilating the colt's bowel with liberal quantities of water forcibly pumped ahead of the tube. I have seen cases where the pain was instantly stopped by this process without any other treatment whatever, indicating that the mechanical dilation had relieved what was probably a slight invagination. I have also seen sequestra passed after a day or two where colts had recovered from what appeared to be invagination and where no doubt invagination had been sufficient to cause pain and death of the part, but not extensive enough to cause permanent obstruction.

As to treatment in the adult horse, I have nothing to suggest. My method is, as soon as I feel reasonably certain of my diagnosis, to seek permission to have the animal destroyed. The large opening in the abdomen that is usually required to locate and disengage the strangulated bowel in the dead horse has thoroughly discouraged me against any attempt at surgical interference to relieve this condition in the living one.

Any journal or book that supplies you with one good working idea is worth ten times what it costs you and may make the difference between success and failure.

Veterinary Fees

By MART R. STEFFEN, V.S., M.D.C., Potter, Wis.

(*Continued from page 374, June issue*)

Night Service

IN some sections of the United States it is customary for veterinary practitioners to make an extra charge for their services after six o'clock in the evening, while in other sections the extra charge begins at darkness. In still other parts of the country no extra charge is made and the practitioner makes calls and gives service at night for the same fee that he receives during daytime.

All veterinary practitioners should receive more for night services than they do for day services. Because:

1. The night call is one of the most disagreeable features in connection with a veterinary practice, and especially so in a country practice.

2. In nearly every instance, the occasion of a night call is an urgent, more or less serious condition. If it were not serious, *at least in the mind of the client,* the practitioner would not be called before morning. Most people actually *expect* to pay a higher rate for night services than for day services.

3. The veterinarian encounters greater hazard in the matter of infection and injuries at night services.

There is an item in connection with the levying of an extra charge for night service that in itself helps to make life more agreeable for the veterinary practitioner. This is the fact that, knowing that they will have to pay an additional fee if they disturb the doctor at night, his clients do not wait until bedtime in calling him to cases that have developed during the day. Neither will they call him to treat cases that are insignificant and that could just as well have been left alone until the following morning. There is a queer tendency among most laymen, and more especially among farmers, that seems to be evident in all sections of the country; it appears to be psychological in nature. This tendency is characterized by procrastination as long as there is daylight. As soon as darkness sets in there is engendered a fear that knows no bounds. Although the animal may have been sick since early in the day, when night arrives the veterinarian must also arrive. There is no better cure for this psycopathic tendency in a community than an extra charge for such night services.

Just what this extra charge for night services should be varies with the circumstances connected with the case. Under ordinary conditions an extra charge of one dollar is reasonable and wholly satisfactory. A call that is made in the daytime for three dollars should cost four dollars in the night time, providing that the veterinarian does not remain in attendance over one hour. Each additional hour should be charged for at the rate of one dollar. In some parts of the south and west a night call is never less than five dollars. In the east and middle west this would be considered excessive.

Protracted Colic Cases

The practicing veterinarian is quite regularly called upon to treat cases of colic, acute indigestion, and similar conditions, which require more or less constant attention. In a country practice especially, a case of this kind occurring six or seven miles distant from the doctor's office makes it impossible for the veterinarian to leave the case until the animal is at least showing signs of recovery. Frequently this makes imperative an attendance of three or four hours. Under such conditions the attending veterinarian can not figure his fee wholly on a mileage basis, and he must make a charge for time service in addition to the regular fee per mile. If, for instance, the fee for a visit to the farm were three dollars the doctor would add to this a charge for steady attendance at a fixed price for each hour. The usual charge for such attendance is at the rate of one dollar the hour. This charge is very reas-

onable, and still it makes it more readily possible for the veterinarian to remain with a case of this sort a sufficiently long time by reducing the possibility of losses, in a financial way, that might come as a result of prolonged absence from his office.

If, in the treatment of a case of intestinal flatulence, the veterinarian finds it necessary to tap the gut, he is wholly justified in making an extra charge for this operation. Too many veterinary practitioners fail to take advantage of this; they are in the habit of "throwing it into the bargain." The procedure of tap ping the intestines in such cases with trocar and cannula is a purely operative procedure, and one for which an extra charge is always permissible. The customary charge for this operation is five dollars, in addition to the mileage fee; two dollars is a more reasonable charge.

Another procedure for the performance of which most veterinary practitioners make no special charge is the passage of a stomach tube. Passing the stomach tube in veterinary practice is an operation requiring special skill, and a special fee should always be charged therefor. This special fee varies from one to three dollars, in addition to the mileage fee; two for passing the tube is about right. If it must be passed repeatedly a smaller charge should be made. Whenever it becomes necessary to resort to the use of expensive alkaloids, such as physostigmin, for instance, an extra charge for their administration is also permissible.

In all cases the client's attention should be called to the importance of the foregoing procedures, and he should be impressed with the fact that they are to be considered unusual procedures and that their employment will affect the charge for services. Many make a uniform charge of one dollar for a hypodermic injection (other than tetanus antitoxin) and this is a satisfactory method.

If it is customary to present the bill for services in writing each item should be emphasized as, for example:

Dec. 8.	Night visit to bay mare	$3.00
"	Tapping operation	2.00
"	Hypodermic injection	1.00
		$6.00

A simple statement of $6.00 for professional services might appear excessive, but is preferable in some localities.

Obstetrics in Dairy Animals

In a dairy region the practising veterinarian's entire success in many instances hinges upon his tactful handling of obstetrical cases. While the correction of parturition difficulties is in the main a mechanical proposition, the young graduate must be able so to conduct himself in the handling of these cases that the termination of the case in hand will result satisfactorily from a financial standpoint, both for his client and himself, Especially must the recent graduate be on his guard in localities where no graduates have yet practiced. In such localities he must at times be willing to sacrifice his fee for the protection of the reputation which he has begun to build up.

The old proverb that "a bird in the hand is worth two in the bush" is a downright lie when applied to veterinary obstetrical cases. The young graduate in many instances will find it to his advantage in the end to let the "bird in the hand" slip, while he makes himself ready to grasp those in the "bush." I mean by this that because of lack of experience he may unintentionally complicate a case of dystocia to such a degree that he involves himself in a disagreeable set of circumstances. Out of a simple case he frequently makes a difficult one. Until the recent graduate is quite sure of himself in the handling of cases of dystocia in cows, he must not allow himself to adhere too rigidly to a schedule of fees for services in these cases. While the fee for a case of bovine obstetrics should never be less than five dollars, the average young graduate will do well to keep the fee in this limit during his first few years of practice. Because there are some exceptions, I have said the *average* young graduate should do this.

I wish to impress this so forcibly upon the minds of recent graduates who are about to establish themselves in a dairy community that they will never forget it. Nothing, in a dairy practice, will so quickly establish a reputation for a young veterinarian as an exhibition of good

judgment in levying the fee for service in obstetrical cases. If he uses good judgment in this regard, many shortcomings in his conduct of a case will be overlooked. On the other hand, if he is too intent upon "the bird in the hand" he promptly gets into "hot water."

When this same practitioner has attained several years of experience and when he has become sure of himself in the handling of these cases, he must not hesitate to collect for his experience and acquired expertness. I say *expertness* because it is nothing less; the ease and finesse with which many old, experienced country practitioners handle their obstetrical cases are most admirable.

A reasonable schedule of fees for obstetrical service by experienced practitioners is the following:

Ordinary cases	$ 5.00
Difficult cases, delivering a dead calf	7.50
Difficult cases, delivering a live calf	10.00
Difficult cases, necessitating embryotomy	10.00 to 15.00

An extra charge is permissible in cases handled in the night time.

Equine Obstetrical Service

Cases of dystocia in mares constitute one of the most urgent conditions that confront the practicing veterinarian. The successful handling of these cases is always productive of a good fee as well as of increased popularity of the practitioner. In the handling of cases of dystocia in mares the young graduate must, however, bear in mind a few essentials which are of the utmost importance from the standpoint of establishing his reputation in the community. One of these essentials is that the beginner in practice must not be too ready to take cases that have been meddled with by laymen or empirical practitioner. He can in many instances save his pocketbook and his reputation by refusing to take cases of this sort. Should it be impossible for him to refuse to serve for one reason or another, he should not take charge of the case until after he has explained emphatically to the client that the case is to be considered as already infected and unfavorable and that he can take no share of the responsibility for the outcome of the case. He should impress upon the client that, while he will do all that lies in his power he can promise nothing. In the presence of such circumstances the practitioner finds a good opportunity to educate his client. In the face of an impending loss of both mare and colt, the client is usually in a very receptive frame of mind for intelligent instructions pertaining to the case.

The young graduate should endeavor to make his client understand that dystocia in mares is a much more grave condition than dystocia in cows, that the mare readily succumbs to infection, and that the colt will survive only a few hours after labor begins. For these reasons it is imperative that expert assistance be engaged at the earliest possible moment. It can do no harm if the practitioner should even go so far as to assure a satisfactory termination of the case if he is engaged at the first sign of trouble.

The rash acceptance of all cases of equine dystocia always proves to be an expensive matter for a young graduate. If he accepts a case merely to collect, he often draws the short end of the bargain in cases that he gets second-hand. The "knocks" and consequent loss of other business as a result of a death in such cases are hard to overcome.

The practitioner's fee for services rendered in cases of difficult parturition in mares should always exceed the fee for the same service in cows. This has reason in the fact that both dam and offspring are usually more valuable and also in that the correction of abnormalities of parturition is usually more difficult in mares. Many expert bovine obstetricians are miserable failures when they approach similar conditions in the mare. The fee that the practitioner can demand for obstetrical services in the mare are influenced by:

1. The value of the mare and colt.
2. The gravity of the case.
3. The life or death of the colt.
4. The condition in which the case comes into the practitioner's hands.

1. The value of the mare is to be taken into consideration only when the

(*Continued on page* 809)

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A Veterinary Corps of the National Army Authorized

ACTING under authority granted by Congress to establish such organizations in the army as he deemed necessary for the good of the service, the President has authorized the formation of a veterinary corps as a part of the National Army, just as was predicted months ago in these pages would be done.

The Veterinary Corps will rank up to and including major, which is very satisfactory for a beginning; if the corps acquits itself with credit and justifies it, there is reason to believe that higher honor and greater opportunities will not be withheld. There should be colonels in the corps—it rests with the officers of the corps whether there will be. Should wisdom be shown in the selection of the remaining officers of the corps, equal to that employed in the selection of those already appointed, there can be no question that the Veterinary Corps will render a service in the new army of which everyone in the profession will be proud, and which the War Department will be glad to reward.

When the quota of the various parts of the National Army is complete, the Veterinary Corps will comprise about forty majors, about 150 captains and first lieutenants and second lieutenants sufficient to make not more than one veterinarian for each 400 army horses.

At this writing no captains nor first nor second lieutenants have been commissioned in the Veterinary Corps of the National Army, and only nine majors. The majors are:

Name	Home Address	Present Station
Bemis, Harold E.,	Ames, Iowa	Camp Funston, Ft. Riley, Kans.
Cotton, Charles E.,	Minneapolis, Minn	Washington D. C.
Klein, Louis A.,	Philadelphia, Pa	Washington D. C.
Marshall, Clarence J.,	Philadelphia, Pa	Washington D. C.
Merillat, Louis A.,	Chicago, Ill	Camp Greene, Charlotte, N. C.
Nelson, Nelson L.	Ames, Iowa	Camp Servier, Greenville, S. C.
Staley, Raymon M.,	Camp Hill, Pa	Washington D. C.
Turner, John P.,	Washington, D. C	Camp Meade, Annapolis Junction, Md.
White, David S.,	Columbus, O	Washington D. C.

It is more than probable that it will be ruled that the present Veterinary Reserve Officers assigned to active duty are not a part of the Veterinary Corps and that they will be relieved as fast as the new corps is formed, being reassigned to the reserve list or taken into the new corps as the merits of the individual members and the needs of the service may dictate. It is no secret that the plan of the Veterinary Officers' Reserve Corps has been in some respects a disappointment.

This is not primarily the fault of the

personnel of the corps but of the way in which it was formed. A considerable number of examiners were appointed and letters sent almost broadcast *asking* veterinarians to accept these commissions as second lieutenant. In this way the commission was cheapened. A commission in the National Army is an honor and a trust to be *sought*, not proffered unsolicited, and prized greatly when obtained. It carries with it restrictions, dignity and responsibility that make deplorable its cheapening.

While many splendid men, the superiors of whom the profession does not contain, sought and obtained commissions in the Veterinary Officers' Reserve Corps for purely patriotic reasons, the result of the methods pursued was to call into the service in addition to these a number who looked upon their appointment as "getting a job" at $1,700 per. And the first great work of the Veterinary Corps seems to be the task of weeding out the misfits, men who should have remained in civil practice, for which they are better adapted and where there is equally urgent need for their services.

There have been some disappointments in the Veterinary Officers' Reserve Corps professionally, and again the fault lies not with the personnel primarily but with its management. Young veterinarians, having graduated but a few months ago, were confronted with problems no veterinarian without years of practical experience is qualified to handle. For example, in some instances six to a dozen Veterinary Reserve Officers, some just out of school, others from the meat inspection service and not one with any experience in practice, were sent to a camp where there were as many thousand horses, several hundred afflicted with shipping fever in its various stages and with other ailments. Again where one or more officers with years of experience were available, the veterinarian in charge was not always selected from among the experienced men. Sometimes the first to arrive regardless of qualifications was placed in charge. The magnitude of the task simply overwhelmed them. Again, men without a day's experience in meat inspection were set to this work, just as inspectors from the B. A. I. service were sent to remount stations.

But this is water over the dam. The Veterinary Officers' Reserve Corps contains as fine material as the profession affords. One of the first duties of those entrusted with organization of the Veterinary Corps of the National Army must be to select this material and use it where its services will count for most. The enlisted personnel must also be given careful consideration; veterinary students, horseshoers, coachmen, horsemen, none but who possess particular adaptation, must be selected from other parts of the army for this corps.

The commission of major in the V. C. N. A. is no sinecure; the task is gigantic. The army is so large that it has all but overwhelmed everybody. No major in the veterinary corps, no veterinarian in the country knows how to handle a half million horses or a hundred thousand or ten thousand; but it must be done. It is only by entrusting this work to the best brains, the greatest ability and the widest experience that the veterinary profession of America affords, that it can be accomplished creditably. This the War Department gives every evidence of doing.

The opportunity of the veterinary profession to acquit itself with credit is a hundred times greater than ever before; but the opportunities for discrediting itself for a generation to come are proportionately multiplied. It is a time for serious, earnest, well directed effort.

The day isn't far off when our modern farmers will realize that the tractor has a definite place on the farm; also that the horse has its place, and that a permanent one.—*The American Thresherman and Farm Power.*

Reports that have been received recently by the Department of Agriculture indicate that the losses from anthrax during the present season will reach or exceed the maximum amount lost in any previous year.

The Subscription Price and the Need for Veterinary Medicine

THE wisdom of the raise in subscription price, forecasted in January, announced in September and inaugurated in the October issue, has been demonstrated further by the events that have transpired during the past thirty days.

The war revenue measure just enacted by Congress adds to the burdens of publishers in the matter of increased postage rates. Periodicals have heretofore been carried in the mails at one cent a pound, making the cost for mailing the AMERICAN JOURNAL OF VETERINARY MEDICINE about sixty dollars a month. The new rate provides for a zone system of charging, the present rates to be doubled to nearby points and increased up to 600 per cent. for distant points.

First class postage is increased from two to three cents an ounce, a small increase on a single letter or on a dozen letters, but more than 400 letters carrying first class postage are mailed daily from this office, and the increased rate, therefore, adds more than $1,200 a year to our postage bill, or with the increase in second class postage rates, possibly $2,500 a year.

We have no complaint to make because of this increased postage bill. The war revenue bill is a remarkably wise and just measure. It is a matter of felicitation that the loyalty of subscribers enable us to make adjustments that permit the paying of this share of the tax and at the same time not only keep up the high standard of VETERINARY MEDICINE but actually increase its usefulness to readers.

These are exceedingly critical times; some previous wars have been a tremendous stimulus to progress, but no war in all the history of mankind has stimulated progress as has this one. Things have come to pass in Europe in a year that under normal conditions would have required a generation. Tremendously rapid times are ahead in America. Perhaps no progress in Europe has been greater than that in medicine and surgery and America may expect revolutionary progress in medicine, surgery and sanitation, both human and veterinary.

Conservation of live stock is going to mean almost as much in civil practice as in the army. Farm animals are worth more than ever before, and their owners will demand as never before progressive, up-to-the-minute service. The alert veterinarian not needed for army service who keeps up to war-quickened progress, is going to be busier than ever before, and more prosperous. *The veterinary profession needs now, as never before, a journal whose broad service will enable them to keep at the very forefront of progress.* The AMERICAN JOURNAL OF VETERINARY MEDICINE is prepared to supply this need.

A Holstein bull recently sold for $53,000.

The dairy industry produces 18 per cent of all the human food consumed in this country.

There are 92,000 farms in Texas without cows, hogs or poultry. The Farmers' Union has taken steps to remedy the condition.

Opportunities for success or failure are one hundred times more numerous now than in the days of peace.

It is estimated by the U. S. Biological Survey that about 80,000 deer are killed legally in the United States each year. These produce nearly 10,000,000 pounds of venison. It is believed that the number of deer can be increased 25 per cent easily.

Veterinary Reserve Officers Assigned to Active Duty

WHEN it was announced last June that the War Department desired to enroll 1,500 veterinarians as members of the Veterinary Officers' Reserve Corps with commissions as second lieutenant, the AMERICAN JOURNAL OF VETERINARY MEDICINE urged its readers to take the examinations for this service as the one of choice available in the army; some counseled against this on the ground that the rank was not high enough and advised veterinarians instead to enlist in the army as privates. The response to the call for veterinary reserve officers was immediate, more than 1,300 having appeared for examination and about 1,000 being commissioned, of whom 777 were assigned to duty at the various camps and overseas before the formation of the Veterinary Corps of the National Army and the discontinuance of further enrollment in the Veterinary Officers' Reserve Corps. So far as we have learned, fewer than half a dozen veterinarians followed the advice to enlist as privates.

The following list gives the names of all those commissioned in the Veterinary Officers' Reserve Corps who have been assigned to duty. As the number is in excess of that permitted by the present regulations, which limit the number of veterinary officers in the army to one for every 400 horses, it is not probable that further commissions will be issued in this service in the near future unless the number of horses in the army should be largely augmented soon.

In the following list, the first address following the name of the veterinary reserve officer is his home address and the second address, the point to which he is assigned. In many instances, as will be noted, the officer was not assigned to a camp, but merely to a department, his further assignment being left to the commandant of the department.

Veterinarians Assigned to Duty—Veterinary Officers' Reserve Corps

Adams, Lawrence B., Sikeston, Mo.; Ft. Worth, Tex.
Adams, Robert E., 1317 E. 28th St., Kansas City, Mo.; Southern Dept.
Agnew, Merrill E., Smith Center, Kan.; New York.
Allen, Eugene S., Claremont, Va.; Petersburg, Va.
Allen, Glen L., Oakland, Ill.; Chicago, Ill.
Alen, Geo. Albert, Corning, Kans.; Ft. Sam Houston, Tex.
Allen, Ivan W., Oklahoma City, Okla.; Montgomery, Ala.
Allen, Jas. H., Potsdam, New York; New York.
Alexander, Oliver C., Pawnee, Ill.; Kansas City, Mo.
Alexander, Samuel A., West Raleigh, N. C.; Front Royal, Va.
Alkire, Edward W., Monte Vista, Colo.; Linda Vista, Cal.
Altman, Irving E., 131 Ashland Place, Brooklyn, N. Y.; New York.
Andreassen, Sigurd K., Barnesville, Minn.; American Lake, Wash.
Andrews, Asa R., Scottsburg, Oregon; Southern Dept.
Applegate, Ralph W., Loveland, Ohio; Louisville, Ky.
Armstrong, Guy C., Lewistown, Ohio; Southern Dept.
Arnold, Ira H., Washington, D. C.; Annapolis, Md.
Ash, James J., Ft. Sam Houston, Tex.; Southern Dept.
Atterberry, James M., Sidney, Ill.; Chicago, Ill.
Austin, Francis M., Belchertown Mass.; Ayer, Mass.
Austin, James A., Fulton, Ky.; Hattiesburg, Miss.
Aymon, Sidney C., Bunkie, La.; Charlotte, N. C.
Baber, James B., Stockton, Ill.; Rockford, Ill.
Babcock, Chas. S., Chebanse, Ill.; Rockford, Ill.
Baeszler, Alfred T., 90 Broad St., Stapleton, Staten Island; Wrightstown, N. J.
Baker, Ernest C., Bucklin, Kans.; Ft. San Houston, Tex.
Baker, Paul K., Eagle, Neb.; Chicago, Ill.
Ballou, Harrison B., Peoria, Ill.; Boston, Mass.
Ballow, Joseph R., Ozark, Ala.; Ft. Keogh, Mont.
Balthaser, Harry B., 4223 Lancaster Ave.; Philadelphia, Pa.; Wrightstown, N. J.
Barker, Harry E, Clifton Springs, N Y.; New York.
Barnes, John B., Manhattan, Kans.; Southern Dept.
Barrett, Chas. W., Pasadena, Cal.; Linda Vista, Cal.
Barr, Albert Clyde, 2618 E. 9th St., Kansas City, Mo.; Ft. Worth, Tex.
Barrett, John T., Chicago Heights, Ill.; Macon, Ga.
Barrett, Lawrence, Cascade, Iowa; Southern Dept.
Barringer, J. L., Penn Yan, N. Y.; New York.
Barstow, Ivan Lee, Eureka, W. Va.; Greenville, S. C.
Bartholomees, Geo. E., Sheldon, Mo.; Alexandria, La.
Bates, Frank R., 133 Lovering Ave., Detroit, Mich.; Chicago.
Bartholomew, Geo. K., Schwenksville, Pa.; Wrightstown, Pa.
Bateman,, Walter C., Sullivan, Ill.; Boston, Mass
Beall, Clayton A., 2234 Nichols Ave., S. E., Washington, D. C.; Syracuse, N. Y.
Bear, Fred L., Charleston, Ill.; Houston,, Tex.
Beattie, Robert S., Fort Sam Houston, Tex.; Southern Dept.

Beauman, Harry G., Drexel, Mo.; Ft. Riley, Kans.
Beck, Francis W., 5713 Woodland Ave., Philadelphia, Pa.; Augusta, Ga.
Becker, Roscoe H., Ft. Collins, Colo.; Linda Vista, Cal.
Beckham, Louis E., Tuscaloosa, Ala.; Southern Dept.
Beckner, Paul C., Greenfield, Ind.; Chillicothe, Ohio.
Bedwell, Geo. E., Hiawatha, Kans.; Ft. Sill, Okla.
Beeman, Howard N., Chillicothe, Ohio; Ft. Keogh, Mont.
Behney, Jacob E., Roanoke, Va.; Kansas City, Mo.
Bell, Carey L., Asheville, N. C.; Charlotte, N. C.
Bell, Ralph M., Salamanca, N. Y.; Ft. Reno, Okla.
Bennett, Basil, Shawneetown, Ill.; Houston, Texas.
Bennett, Marcus E., Black Earth, Wis.; Chicago.
Bertram, Frederick De M., Middletown, R. I.; Ayer, Mass.
Bevan, Godfrey C., Uniontown, Ala.; Spartansburg, S. C.
Bibens, David H., Garden City, Kans.; Ft. Sill, Okla.
Bishop, Chas. P., Manheim, Pa.; Wrightstown, N. J.
Black, Elmer E., Mitchellville, Iowa; Columbia, S. C.
Black, Wm. G., Norfolk, Va.; Newport News, Va.
Blackburn, Herbert L., Covington, Ky.; Southern Dept.
Blue, Maurice, Petoskey, Mich.; Battle Creek, Mich.
Boem, Nels T., Harmony, Minn.; American Lake, Wash.
Bolender, Fred J., Brownwood, Tex.; Linda Vista, Cal.
Bolton, Ray B., Cabot, Vt.; Ayer, Mass.
Booth, Thomas O., Princeton, Mo.; Ft. Worth, Tex.
Boshart, Chas. R., Lowville, N. Y.; New York.
Bosley, Milton A., Washington, D. C.; Annapolis Junction, Md.
Bostwick, David C., Ardmore, Okla.; Ft. Worth, Tex.
Boughton, Ivan B., 1214 Penna. Ave., Columbus, Ohio; New York.
Boyce, Harold J., 610 Sandusky Ave., Kansas City, Kans.; Little Rock, Ark.
Boyd, James H., Clayton, Mich.; Battle Creek, Mich.
Boyd, Marvin L., Esther, Mo.; Southern Dept.
Brackbill, Marsh La Fevre, 366 W. 52nd St., New York City; Ft. Reno, Okla.
Bradbury, Dean D., Fairbanks, Ind.; Hattiesburg, Miss.
Brady, Ezra M., Rockwell, Iowa; Columbia, S. C.
Branson, Roscoe A., Wichita, Kans.; Ft. Sill, Okla.
Bratten, Fred W., Lawrence, Ind.; Louisville, Ky.
Brecheisen, Aaron A., Edgerton, Kans.; Ft. Riley, Kans.
Breen, Thomas A., Bridgeville, Del.; Southern Dept.
Breniser, Lawrence G., Bellefontaine, Ohio; Southern Dept.
Bridges, Burlin C., Boscobel, Wis.; New York.
Bright, Wm. A., Solomon, Kans.; Southern Dept.
Brod, Wm., 22 E. Ross St., Lancaster, Pa.; Augusta, Ga.
Broude, Harry F., Harrisburg, Pa.; Annapolis Junction, Md.
Brown, Lloyd J., Parsons, Kans.; Ft. Sam Houston, Tex.
Brown, Wm. John, Frederick, Md.; Front Royal, Va.
Browne, Glenn R., 3806 Lowell Ave., Chicago, Ill.; Chicago, Ill.
Browne, Leland A., 2555 Glenmaur Ave., Columbus, Ohio; St. Louis, Mo.
Bryan, Ernest W., Auburn, Ala.; Anniston, Ala.
Buck, Floyd L., Grant Junction, Ia.; Front Royal, Va.
Buffin, Kenneth E., 2303 1st St., N. W., Washington, D. C.; New York.
Burdett, Cyril Henry, Centralia, Kans.; Ft. Riley, Kans.
Burgett, Clark S., Marquette, Mich.; Battle Creek, Mich.
Butin, Geo. E., 4003 Oak St., Kansas City, Mo.; Kansas City, Mo.
Butler, Fred M., Warsaw, Ohio; Louisville, Ky.
Butler, Homer C., Madelia, Minn.; American Lake, Wash.
Butler, Richard E., Sparta, Wis.; Sparta, Wis.
Byerrum, Roswell C., Muscatine, Ia.; Chicamaugua, Ga.
Calhoon, Harry L., Irene, S. D.; Presidio of San Francisco.
Calkins, Raymond, Osceola, Ia.; Columbia, S. C.
Campbell, Daniel L., White, Ga.; Spartansburg, S. C.
Campbell, Geo. F., 1206 10th St., N. W., Washington, D. C., Annapolis Junction, Md.
Campbell, John N., Truman, Minn.; Sparta, Wis.
Campbell, Robt. H., Denison, Kans.; Little Rock, Ark.
Campbell, Ora L., Astoria, Ill.; Ft. Jay, N. Y.
Carlisle, Billy E., Cleola, Ga.; Spartansburg, S. C.
Carnahan, Clarence H., Ft. Collins, Colo.; Linda Vista, Cal.
Carpenter, Peter T., Metamora, Ohio; Kansas City, Mo.
Carr, Amasa K., Ivanhoe, Minn.; Battle Creek, Mich.
Carr, Parker F., St. John, Kans.; Chicago, Ill.
Casey, John M., Danville, Ky.; Hattiesburg, Miss.
Casey, John W., Pawnee, Neb.; Augusta, Ga.
Castleberry, Guy, Ft. Sam Houston, Tex.; Southern Dept.
Catlett, James G., Fort Keogh, Mont.; Ft. Keogh, Mont.
Caudill, Boone L., Alta Vista, Ia.; Chicago, Ill.
Cavanaugh, Earl C., Johnstown, Pa.; New York.
Cheely, Edw. J., Ft. Sam Houston, Tex.; Southern Dept.
Chew, Roy D., Sheridan, Ind.; Hattiesburg, Miss.
Christman, Paul S., 42nd & Halsted Sts., Chicago, Ill.; Rockford, Ill.
Churchill, Thos. W., 332 W. 84th St., New York City; West Point, N. Y.
Clafin, Merle L., Mondoir, Wis.; Fort Worth, Tex.
Clark, Edgar M., Ft. Sam Houston, Tex.; Southern Dept.
Clark, Floyd E., Humboldt, Ia.; New York.
Clawson, Earle D., Hopewell, N. J.; Petersburg, Va.
Cleland, Lauren W., Palmyra, Wis.; Sparta, Wis.
Cline, Clifford M., Maryville, Mo.; Ft. Sam Houston, Tex.
Cline, Morton L., Madison, S. D.; Waco, Tex.
Cole, Francis, Douglas, Ariz.; Douglas, Ariz.
Combs, Arthur W., East Orange, N. J.; New York.
Conn, Geo. Harold, Fremont, Ohio; Kansas City, Mo.
Connelly, John T., Lincoln, Neb.; Anniston, Ala.
Constable, Geo. W., Fort Bliss, Tex.; Southern Dept.
Cook, Chauncey E., Ada, Ohio; Ft. Reno, Okla.
Cook, Wm. B., Ransom, Ill.; Rockford, Ill.
Cooper, Paul G., Hastings, Neb.; Linda Vista, Cal.
Cornell, Wm. A., 1116 Forest Ave., Kansas City, Mo.; Alexandria, La.
Cotton, Harry L., Albion, Mich.; Waco, Tex.
Couchois, Clifford J., Jackson, Mich.; Battle Creek, Mich.
Counzelman, Otto J., Vassar, Mich.; Battle Creek, Mich.
Courtright, John M., Lathrop, Mo.; Kansas City, Mo.
Cowherd, Chas. M., 559 E. 13th St., East St. Louis, Ill.; Chicago, Ill.
Cox, James C., Tonkawa, Okla.; Charlotte, N. C.
Crawford, Nathan N., Waukon, Ia.; Southern Dept.
Crist, Wm. L., Midland, Ohio; Chillicothe, Ohio.
Croll, Forrest B., 11 N. Baltimore St., Kansas City, Kans.; Kansas City, Mo.
Crosby, Jos. F., Newark, N. Y.; Yaphank, L. I., N. Y.
Crouse, James W., Cupola, Pa.; Augusta, Ga.
Crumbaugh, Andrew J., Neosho, Mo.; Kansas City, Mo.
Crumpacker, Clifton G., York, Neb.; Anniston, Ala.
Curtis, Glenn R., 4502 Emerald St., Chicago, Ill.; Atlanta, Ga.
Daily, Clive, Mobile, Ala.; Anniston, Ala.
Dappen, Benj. E., Ellsworth, Kans.; Hattiesburg, Miss.
Darlington, Paul B., Arcadia, Kans.; Ft. Sam Houston, Tex.
Davis, Art M., Stormlake, Iowa; New York .
Dawson, Alverda J., 201 I St., N. W., Washington, D. C.; Des Moines, Iowa.
Deal, Alfred F., Rockville, Conn.; Ayer, Mass.
Dean, Evard A., Omaha, Neb.; Chicago, Ill.
Decker, Wallace M., Ft. Collins, Colo.; Southern Dept.
Derivan, Jos. F., New Vienna, O.; Chicago, Ill.
Derrick, Jesse D., Red Lion, Pa.; Wrightstown, N. J.
Detwiler, Russell S., Elyria, O.; Chillicothe, O.

Dierks, Walter R., Monroe City, Ia.; Chicago, Ill.
Dildine, Seth C., Lithopolis, O.; Louisville, Ky.
Divine, John P., Ballston, Va.; Ft. Reno, Okla.
Dixon, Oness H., Jr., Scotland, S. D.; Waco, Tex.
Dixon, Wm. F., Peoria, Ill.; Spartansburg, S. C.
Doepel, Chas. H., Mt. Vernon, N. Y.; New York.
Doerr, John, Melbourne, Iowa; Front Royal, Va.
Doherty, Leo A., Luxemburg, Wis.; New York.
Donahoe, Michael, Milford, Iowa; Chicago, Ill.
Dornblaser, Jos. H., Bridgeport, Ill.; Rockford, Ill.
Douglass, Arden H., 1818 Cherry St., Kansas City, Mo.; Ft. Worth, Texas.
Draper, John T., Templeton, Iowa; Southern Dept.
Drayer, Jos. H., 4032 Calumet Ave., Chicago, Ill.; Rockford, Ill.
Drury, Andrew P., Ste. Genevieve, Mo.; Alexandria, La.
Dunkelberger, John W., Bernville, Pa.; Wrightstown, N. J.
Dunkley, Benj. H., Kalamazoo, Mich.; Waco, Tex.
Dunn, Chas. W., Hillsdale, Wyo.; Kansas City, Mo.
Dunn, Ralph A., Fredericksburg, Va.; Newport News, Va.
Eagan, Paul H., Nashville, Tenn.; Little Rock, Ark.
Eakins, H. S., Ft. Collins, Colo.; Linda Vista, Cal.
Eastwald, John D., Independence, Wis.; Chicago, Ill.
Edwards, John R., Newark, O.; Louisville, Ky.
Effner, Ralph G., Mulvane, Kans.; Ft. Riley, Kans.
Egan, Harold E., Dayton, O.; Front Royal, Va.
Eggleston, Earl L., Viborg, S. D.; Waco, Tex.
Elberson, Noel C., Clinton, Ind.; Chillicothe, O.
Elson, Russell E., Shellsburg, Iowa; Des Moines, Ia.
Emerson, Harry H., 1225 S. Garfield Blvd., Chicago, Ill.; Ft. Logan H. Roots, Ark.
Empey, Wm. H., Battle Creek, Iowa; Columbia, S. C.
Erb, Roe C., Boswell, Ind.; Hattiesburg, Miss.
Erfurth, Ernest F., 725 Stewart St., Kansas City, Kans.; Fort Worth, Texas.
Ericson, Eric O., Eveleth, Minn.; Battle Creek, Mich.
Eshleman, John M., Parkersburg, Pa.; Augusta, Ga.
Essex, John J., Chevy Chase, Md.; New York.
Esslinger, Monroe S., Birmingham, Ala.; Ft. Oglethorpe, Ga.
Evans, John J., Jr., Armstrong, Mo.; Ft. Worth, Tex.
Evans, Jos. H., Kellnersville, Wis.; Ft. Keogh, Mont.
Evans, Maurice E. J., Manlius, N. Y.; Garden City, L. I.
Ewing, Forest R., Shreve, O.; Little Rock, Ark.
Ewing, Harry E., 108 W. 10th Ave., Columbus, O.; Kansas City, Mo.
Fallon, Geo. L., 443 E. Pearl St., Cincinnati, O.; Ft. Oglethorpe, Ga.
Farmer, Clarence R., Keokuk, Ia.; Columbia, S. C.
Fast, Chas. A., Van Wert, O.; Front Royal, Va.
Finley, Edgar W., Elwood, Ind.; Kansas City, Mo.
Finney, Lawrence, West Lebanon, Ind.; Charlotte, N. C.
Fitch, Wilmer H., Maquoketa, Ia.; Atlanta, Ga.
Fitzgerald, Edw M., 1621 N. 4th St., Columbus, O.; Louisville, Ky.
Fitzgerald, Gerald W., Ft. Bliss, Tex.; Ft. Reno, Okla.
Fitzpatrick, Dennis B., 3225 Woodland Ave., Philadelphia, Pa.; Annapolis Jct., Md.
Fitzwater, Mahlon C., Bloomingdale, Mich.; Waco, Texas.
Flowe, Bartlette B., Raleigh, N. C.; New York.
Flowe, Homer P., Raleigh, N. C.; Ft. Riley, Kans.
Forbes, Carmi A., La Salle, Ill.; Spartansburg, S. C.
Forbes, Samuel D., Alexandria, Va.; Petersburg, Va.
France, Walker, Oakland City, Ind.; Charlotte, N. C.
Frank, Havre, Manhattan, Kans.; Chicago, Ill.
Frederick, Harry, Sufferin, N. Y.; Ft. Reno, Okla.
Freer, Archibald, Ellenville, N. Y.; New York.
Friedline, Lloyd M., Jonesboro, Ind.; Chillicothe, O.
Froshaug, Eirin A., Twin Valley, Minn.; American Lake, Wash.
Fry, Chas. R., Cincinnati, Ia.; Little Rock, Ark.
Fry, Curtis L., Denton, Tex.; Linda Vista, Cal.
Fuller, Milan P., Brunswick, O.; Chillicothe, O.
Fulston, Phillip H., Norwalk, O.; Sparta, Wis.
Gale, Howard C., Clyde, Kans.; Ft. Riley, Kans.
Galloway, Peter F., Richmond, Va.; Columbus, N. M.
Garr, Edw. S., Versailles, Ky.; Columbus, S. C.
Gaskill, Ray, 1817 Glenarm St., Denver, Colo.; Linda Vista, Cal.
Gaston, Wendell N., Axtell, Kans.; Ft. Riley, Kans.
Gest, John F., 312 Gazette Bldg., Little Rock, Ark., Alexandria, La.
Getz, Robert L., Mt. Jackson, Va.; Petersburg, Va.
Getz, Leon M., Atlantic, Ia.; Des Moines, Ia.
Gilchrist, Clifford M., Cedar Rapids, Ia.; New York.
Giles, Norwood B., Albany, Mo.; Alexandria, La.
Gilman, Herbert, Glen Cove, L. I., N. Y.; Yaphank, L. I., N. Y.
Gilmore, Richard C., McCool Jct., Nebr.; Greenville, S. C.
Gill, Harry D., 337 E. 57th St., N. Y. City; New York.
Gill, Harry P., 343 E. 57th St., N. Y. City; New York.
Gillie, Peter T., Mansfield, O.; Montgomery, Ala.
Gillman, John H., Jackson, Tenn.; Greenville, S. C.
Glenn, Robt. H., York, S. C.; Southeastern Dept.
Glover, John J., Belle Plaine, Kans.; Ft. Sam Houston, Tex.
Gohde, Henry J., Kiester, Minn.; Battle Creek, Mich.
Goodwin, Percy W., Ft. Sam Houston, Texas.; Boston, Mass.
Gould, Horace A., 4623 Calumet Ave., Chicago, Ill.; Rockford, Ill.
Graham, James W., 23 W. St., N. W., Wash., D. C.; Front Royal, Va.
Green, Fred B., Greenup, Ill.; Chicago, Ill.
Greenlee, Christian W., Beaver Falls, Pa.; Annapolis, Junc., Md.
Grenfell, Frederick A., Glenolden, Pa.; Syracuse, N. Y.
Griessman, Louis, 1049 Lexington Ave., New York City; Yaphank, L. I., N. Y.
Griffin, Chas. J., Spencerville, O.; Columbus, S. C.
Grigsby, John R., Wray, Colo.; New York.
Grover, Sawyer A., Glenwood Springs, Colo.; Linda Vista, Cal.
Guilfoyle, Calvert T., 1526 N. Gratz St., Phila. Pa.; Augusta, Ga.
Guyselman, Playne C., Montrose, Colo.; New York.
Gwinner, Chas. W., Pottsville, Pa.; Augusta, Ga.
Haigh, Henry H., 3438 N. Broad St., Phila., Pa.; Yaphank, L. I., N. Y.
Hall, John W., Onoga, Kans.; Chicago, Ill.
Halsey, Raymond A., Southampton, N. Y.; New York.
Hampton, Richard M., Crescent City, Ill.; New York.
Handley, Geo. A., Yazoo City, Miss.; Macon, Ga.
Handley, John I., Charlotte, N. C.; Charlotte, N. C.
Hannahs, Morgan L., Randolph, Vt.; Ft. Ethan Allen, Vt.
Harding, John H., Climax, Mich.; Battle Creek, Mich.
Harmening, Alfred H. F., Fisher, Ill.; Chicago, Ill.
Harper, Drew Sugg, Winston-Salem, N. C.; Greenville, S. C.
Harriman, Homer, South Lyon, Mich.; Battle Creek, Mich.
Harsh, Forrest R., Obion, Tenn.; Greenville, S. C.
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Steckel, Henry K., Tiffin, O.; Chicago, Ill.
Steinbach, Frederick G.; Kansas City, Mo.
Steinbach, Wm. A., Norristown, Pa.
Steinbrook, John W., San Francisco, Cal.; San Francisco, Cal.
Stevenson, Geo. T., Burlington, Vt.; Ft. Ethan Allen, Vt.
Stewart, Hugh H., Kanawha, Ia.; Little Rock, Ark.
Stewart, Ralph B., Sioux City, Ia.; Des Moines, Ia
Stokes, Sidney W., Byron, Ill.; Southern Dept.
Stott, Ray O.; Des Moines, Ia.; Ft. Bliss, Tex.
Strickland, Robert J., Birmingham, Ala.; Ft. Oglethorpe, Ga.
Strode, Clifton W., Ft. Scott, Kans.; Deming, N. M.
Stroud, Bert B., Brooklyn, N. Y.; Yaphank, L. I., N. Y.
Stryker, Lester H., Red Bank, N. J.; Petersburg, Va.
Stull, Chas. M., McConnellsville, O.; Southern Dept.
Sugg, Redding S., Rocky Mount, N. C.; Alexandria, La.
Sullivan, John K., Watkins, N. Y.; Garden City, L. I.
Swanger, Geo. W., Lebanon, Pa.; Annapolis Junc., Md.
Syferd, Jos. E., Grove City, O.; Montgomery, Ala.
Talbert, Mellis G., Morristown, Ind.; Kansas City, Mo.
Talley, Banks C., Bennettsville, S. C.; Chickamauga, Ga.
Talty, Robert C., Washington, D. C.; Washington, D. C.
Taylor, Frank W., Ridgley, Md.; Washington, D. C.
Taylor, Geo. E., Mobile, Ala.; Anniston, Ala.
Taylor, Oliver A., Detroit, Mich.; New York.
Temple, Edwin, Tampico, Ill.; Rockford, Ill.
Tesdell, Roy H., Minburn, Ia.; Des Moines, Ia.
Thayer, Benj. R., Galesburg, Ill.; New York.
Thomas, John J., Connellsville, Pa.; Wrightstown, N. J.
Thomas, Rollin M., Klemme, Ia.; New York.
Thompson, Arnold J., Hutchinson, Minn.; Vancouver Barracks, Washington.
Thomson, Wm. M., Syracuse, N. Y.; Front Royal, Va.
Ticehurst, Harry, Morsemere, N. J.; Garden City, L. I.
Tillie, Robert S., Muscatine, Ia.; Des Moines, Ia.
Tolley, Emery W., Lexington, Va.; Southern Dept.
Tompkins, Chas. E., Arlington, Minn.; American Lake, Wash.
Torgersen, Henry E., Oakland, Cal.; Portland, Ore.
Trafton, Frank J., Jefferson, Ia.; Atlanta, Ga.
Trainor, Peter F., Ramsey, N. Y.; Ayer, Mass.
Traylor, James T., Witchita Falls, Tex.; Waco, Tex.
Trefzer, Armin C., St. Joseph, Mo.; Ft. Worth, Tex.
Tregilgus, Thos. C., Sibley, Ia.; New York.
Trompeter, Lee R., Edgemont, S. D.; Ft. Sill, Okla.
Tucker, Willard O., Belvue, Kans.; Ft. Leavenworth, Kans.
Turlington, John A., Malfa, Va.; Wrightstown, N. J.
Turney, Carl D., Germantown, O.; Southern Dept.
Utter, Gustaf W., Ceylon, Minn.; American Lake, Wash.
Vail, Irving R., New Haven, Conn.; Ayer, Mass.
Vance, James D., Smithville, Mo.; Ft. Bliss, Tex.
Van der Veer, Henry E., Walworth, Wis.; Chicago, Ill.
Vanskike, Robert B., Mexico, Mo.; Deming, N. M
Van Tuyl, Harry E., Manhattan, Kans.; Southern Dept.
Vestal, Harold C., Noblesville, Ind.; Newport News, Va.
Viers, Silas B., Diller, Nebr.; Kansas City, Mo.
Walch, C. I., St. Joseph, Mo.; Charlotte, N. C.
Wall, Jos. F., Altoona, Ia.; Little Rock, Ark.
Wallace, Ord O., North Bend, Nebr.; Greenville, S. C.
Walker, Edwin P., Wishek, N. D.; Vancouver Barracks, Wash.
Ward, Francis C., Balaton, Minn.; American Lake, Wash.
Warden, Clyde E., Thacker Mines, W. Va.; Montgomery, Ala.
Waters, Fred C., Sunbury, O.; Ft. Oglethorpe, Ga.
Watters, Edw. J., Calumet, Mich.; Battle Creek, Mich.
Watson, Sherman B., Muscatine, Ia.; Ft. Riley, Kans.
Weaver, Herschel J., Crawfordsville, Ind.; Columbia, S. C.
Webb, Goldie J., Sullivan, Ind.; Columbia, S. C.
Webb, Wilton W., Auburn, Ala.; Macon, Ga.
Webster, Lavan E., Effingham, Ill.; Atlanta, Ga.
Weeks, Cornelius C., Washington, D. C.; Ft. Keogh, Mont.
Weigand, Harry G., Ft. Collins, Colo.; New York.
Weigen, James A., Sun Prairie, Wis.; Ft. Worth, Tex.
Weilepp, Harry O., Cisco, Ill.; Boston, Mass.
Welch, Albert J., Brighton, Mass.; Ft. Ethan Allen, Vt.
Weller, Emil E., New York City; Syracuse, N. Y
Welles, Edw. H., Perm Gloss, Tenn.; Macon, Ga.
Wells, Chas. N., Kirkersville, O.; Montgomery, Ala.
Wells, John L., Aurora, Mo.; Southern Dept.
West, True E., Sumner, Ia.; Annapolis Junc., Md.
Weston, Braxton M., Swan Quarter, N. C.; Ft Oglethorpe, Ga.
White, Burnby W., No. Emporia, Va.; Newport News, Va.
White, Clemmense McC., St. Joseph, Mo.; Deming, N. M.
White, Walter G., Lansdowne, Pa.; Augusta, Ga.
Whiting, John A., Waterville, Conn.; Wrightstown, N. J.
Wileden, Lewis A., Lansing, Mich.; Battle Creek, Mich.
Williams, Chas. S., Agricultural College, Miss.; Louisville, Ky.
Williams, Edw. J., Huntington, Pa.; Annapolis Junc., Md.
Williams, Howard L., Graville, O.; Ft. Reno, Okla.
Williams, Zenas L., Cleveland, Wis.; Ft. Benj Harrison, Ind.
Williamson, Ryan M., Americus, Ga.; Spartansburg, S. C.
Williamson, Wm. H., Shelby, N. C.; Greenville, S. C.
Williamson, Wallace L., Cedar Rapids, Ia.; New York.
Wilson, Dayid B., Moorhead, Ia.; New York.
Wilson, Gilbert A., Columbus, O.; Chillicothe, O
Wilson, Homer A., Malta Bend, Mo.; Southern Dept.
Wilson, Howard W., Gilman, Ill.; Ft. Logan H Roots, Ark.
Winchester, Fred N., Burdett, Kans.; Ft. Reno, Okla.
Windrath, Chas. T., Ames, Ia.; Chicago, Ill.
Wise, Howard R., Birdsboro, Pa.; New York.
Wolfe, Harold W., Kansas City, Kans.; Fort Reno, Okla.
Wolfe, Wm. R., Asheboro, N. C.; Ft. Sam Houston, Tex.
Worch, Francis E., Columbus, O.; Louisville, Ky.
Worley, Earl R., Ashland, Nebr.; Kansas City, Mo.
Worthington, Josiah W., Manhattan, Kans.; Southern Dept.
Wright, John L., Salisbury, Mo.; Charlotte, N. C
Wright, Thomas L., Auburn, Ala.; Macon, Ga.
Wright, Willard H., Washington, D. C.; Wrightstown, N. J.
Yoger, Geo. F., Albany, Minn.; Kansas City, Mo
Youmans, Ray S., Undilla, N. Y.; Ayer, Mass.
Young, Harvey W., Columbia, Mo.; Douglas, Ariz.

Youngblood, Earl W., Union City, Tenn., Charlotte, N. C.
Younglove, Frank J., Ripon, Wis.; Chicago, Ill.
Zinkham, Geo. M., Union Bridge, Md.; Petersburg, Va.

BULLETINS OF INTEREST TO VETERINARIANS

The Pineal Gland

By Carey Pratt McCord, M. D., Detroit, Michigan.

Research Laboratory, Parkes, Davis & Co. A résumé is given from recent literature regarding the status of the pineal body as a functioning organ, together with the writer's observations upon the growth of young animals under the influence of pineal materials. The author concludes that because of the involution of the pineal at puberty, the constitutional manifestations of disturbances of the functions of the gland appear to be confined to prepuberal years. The essential characteristics are early sexual development, precocious mental development, general overgrowth of body. The gland is not essential for the maintenance of life and its extirpation is possible. No changes attend the removal of the gland in adult animals, while in young animals according to some authorities pinealectomy leads to precocity of development. Other authorities, however, report no changes after pinealectomy even in young animals. The administration of pineal substance to young mammals is reported to hasten growth and sexual maturity. In unicellular organisms pineal extracts increase the rate of reproduction to more than double that of controls. In larval forms both growth and differentiation are hastened as a result of pineal feeding. An exhaustive bibliography covering the subject is appended to the treatise.

Evidences Associating Pineal Gland Function With Alterations in Pigmentation

By Carey Pratt McCord and Floyd P. Allen, Detroit, Michigan.

Reprint from *The Journal of Experimental Zoölogy*. A record of experiments on tadpoles to show the influence of pineal gland substance upon pigmentation is given in this brochure. It was found that tadpoles fed pineal tissue became very light in color, in fact, so translucent that all the larger viscera were plainly visible through the dorsal body wall. These differentiations are illustrated by drawings and photographs.

Commission on Milk Standards

Reprint No. 386 from Public Health Reports, U. S. Public Health Service.

This is the third report of the commission on milk standards appointed by the New York Milk Committee, and among the subjects considered are, chemical standards for milk, bacteria and bacterial testing, grades of milk, cream, butter, ice cream, condensed milk, skim milk, buttermilk, clarification, homogenization, licenses, labeling, etc.

Bacteria in Milk

By L. A. Rogers, Washington, D. C.

Farmers' Bulletin 490, U. S. Department of Agriculture. Milk, its composition and characteristics, and the bacteria commonly found in it are considered and described. Disease-producing bacteria in milk also receive consideration, the affections sometimes disseminated in this way being mentioned as tuberculosis, diphtheria, scarlet fever, typhoid fever, and summer intestinal diseases of children. Emphasis is laid on the proper handling and care of milk to prevent the presence of undesirable bacteria.

Removal of Garlic Flavor From Milk and Cream

By S. Henry Ayers and W. T. Johnson, Jr., Washington, D. C.

Farmers' Bulletin 608, U. S. Department of Agriculture. An apparatus for removing wild onion or garlic flavor from milk or cream is described, the process consisting in blowing air through the milk, which is heated to 145° F. It is stated that the undesirable flavor may be removed from milk by this method in from thirty to sixty minutes.

Apparatus for Use in Examining Feces for Evidences of Parasitism

By Maurice C. Hall, Detroit, Mich.

Research Laboratory, Parke, Davis & Co. A motor-driven mixer with a vertical shaft terminating at the bottom in a smooth-edged disk, is used for breaking up the feces. To remove the unpleasant gases, a funnel attached by means of a rubber tube to a suction pipe in the laboratory is fastened near and above the mouth of the mixing bottle. After the feces have been disintegrated, they are poured through a set of nine sieves placed in a rack with a solid-bottomed pan underneath. The screens have mesh apertures of 6, 8, 10, 14, 16, 20, 60, 100 and 120 to the inch, being placed in the rack in the order of their fineness, the coarsest at the top and the finest at the bottom. When examining for worms passed after administration of anthelmintics, a smaller rack with six of the coarser screens, the 60 mesh being placed at the bottom, is used. The screens are washed by running clear water through them. The contents of the pan are decanted, sedimented, washed and centrifuged, the end result being a slide on which there is a minimum of foreign matter. After the pan is removed from the rack the screens are washed by running water

through them until all soluble coloring matter and matter fine enough to pass through are removed. The sieves are then examined one at a time in a glass tray of clean water.

Crate-Feeding Poultry for Market

By F. E. Mussehl, Madison, Wis.

Circular 66, Wisconsin Experiment Station. Fattening poultry for market is discussed in this circular, and the conclusion reached that crate feeding is profitable if good vigorous stock is selected; if birds are confined in crates or feeding batteries; if palatable and digestible feeds are used; and if poultry is properly dressed for market.

Three Interesting Poultry Cases

By Dr. B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

Reprint from *The Poultry Item.* In this article Dr. Kaupp describes somewhat unusual poultry cases—abscess of the foot of a White Orpington cock, gangrene of a turkey's leg, and obstruction of the trachea in a White Leghorn hen. The abscess of the foot is perhaps the most common of the three ailments in poultry and often follows a bruise on the bottom of the foot. A cheesy pus forms and the condition is commonly termed "bumble foot." The treatment recommended by the author is to lay the part open, remove the pus and wash with a good antiseptic. The part is then covered with absorbent cotton or antiseptic gauze, which is renewed and the foot dressed once a day, the bird in the meantime being confined in a coop bedded with clean straw. The gangrene in the turkey was of the dry variety, although it was preceded by a thin foul smelling purulent discharge caused from infection of the foot by a gas forming organism. The leg was amputated at the hock joint and later a dry gangrene of the stump developed. The possibility of ergot causing gangrene is mentioned as ergotized seeds may be included in the grain feed for poultry, and a gangrenous condition result from the contraction of the vessels in the body. The case of the hen with obstructed trachea resulted in the death of the fowl, and it was found that a grain of corn had lodged in the upper larynx.

Cost of Starting a Leghorn Flock

By Dr. B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

Reprint from *The Poultry Item.* An experiment to determine the cost of starting a flock of chickens is described in this article. The work commenced April 1, 1916, and 1,395 eggs were set, from which 965 chicks were hatched. The cost of the chicks exclusive of labor and interest on the investment was a little over nine cents each, the eggs having cost $82.70 and oil for incubation $6.65. Later on six cockerels were sold for breeders for $10.00, and 286 broilers for $86.35. On October 27th, there were 400 pullets on hand valued at $400, and cockerels valued at $50.00. The total cost up to that time was $317.00 and the returns $546.35, leaving a profit for the work and interest on investment of $229.35. Further data is given as to the egg production in this flock and also detailed information as to the feed employed and the methods of feeding.

Cutting the Feed Bill

By Dr. B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

Reprint from *The Poultry Item.* The high cost of feed for poultry is considered in this pamphlet, and various rations are enumerated as being economical. However, it was found that wheat, oats and corn are the best from the point of view of nourishment and egg production, and as these cereals have increased considerably in price, the feed bill must of necessity be rather high. Figures are given to show that the high price of eggs is due to a shortage in the supply and the increase in the price of feed rather than to any attempt on the part of dealers to corner the market. It is pointed out that the price of eggs has not advanced in proportion to the increased cost of production.

Some Housing Problems

By Dr. B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

Reprint from *The Poultry Item.* Plans and specifications for building poultry houses and coops are set forth in this booklet, special emphasis being given to means of housing chicks to protect them from rats and at the same time give them ample ventilation. A complete description is also given of a poultry house for a town lot, capable of housing a flock of 12 to 24 hens.

Some Feather Experiments

By Dr. B. F. Kaupp, North Carolina Experiment Station, West Raleigh, N. C.

Reprint from *The Poultry Item.* A number of tests are here outlined to determine the amount of feathers yielded by fowls of different market classes, including geese, ducks, chickens and turkeys.

Actual wool famine conditions are staring the world in the face, and even if the war should end this year, high priced wool for a decade to come is assured.

Department of Surgery

By MAJOR L. A. MERILLAT, Sr., V. C. N. A.

Abscess

(*Continued from October Issue*)

LIKE submaxillary and retropharyngeal abscess, superior cervical abscess too is usually a complication of distemper in horses, but like the former it may occur independently of such a disease, from the absorption of pyogenic microbes from the mucous membrane of the air passages either direct or from the lymph vessels coming from the other nodes.

Abscess of the Guttural Pouches

The guttural pouches are sometimes the seat of a collection of pus. It must be differentiated from retropharyngeal abscess with which it is sometimes confused. The absence of local phlegmon, its chronicity and the periodicity of the nasal issue distinguish it from the abscess of the lymph nodes. It is during eating that the nose discharges most when the source is the guttural pouches, and often the issue is flaked with particles of desiccated pus which reveals the character of the collection.

The fault is sometimes an open auditive (eustachian) tube which admits food particles into the pouch. We have found the pouches impacted with feed, but more often only particles pass through from time to time and serve as the carriers of infection into that cavity.

Treatment. There are two methods of procedure against these collections, namely:—(a) draining them from without and (b) incising the pouch from within the pharynx. The former has often been referred to in our literature as *hyovertebrotomy* and the latter as *staphylotomy*. We prefer the former as the latter is the more complex procedure.

To perform hyovertebrotomy the patient must be secured in the recumbent position after having received an anesthetic of chloral hydrate, or it may be chloroformed. The incision is made along the border of the mandible at its nearest proximity to the wing of the atlas. Here the pouch is most accessible and the invading incision less dangerous than in any other part of the region the pouch occupies. After the skin and superficial fascia are incised an inch long, the pouch is entered by blunt dissection. A strong blunt curved sound is then passed into the pouch and down to its bottom at the level of the larynx where its impression can be felt. Here a careful incision is made and enlarged to give a free escape of the collection and to serve as the subsequent drainage aperture. Through these two apertures the pouch is submitted to daily antiseptic and astringent irrigations until the catarrhal mucosa has improved. For this purpose we use hydrogen peroxid twenty-five per cent, followed each time with a three per cent solution of zinc sulphate, taking some pains to let all of the fluid run out. A soft rubber drainage tube well perforated and sutured into the distal aperture is also helpful, although sometimes on account of the movements of the neck it can not be kept in place.

A treatment of ten to twelve days is usually required before it is safe to allow the apertures to close. It, however, must be remembered that such a treatment

does not remove the cause and on that account a re-accumulation may occur. Some recover entirely, some have a recurrence in six months and others even after a year.

(The following case will serve to give an idea of the course of behavior of this disorder. A small, delivery horse, fifteen years old had been discharging from both nostrils for some months. The discharge itself was not fetid but a stinking emanation could always be detected by scenting the exhaled air. The discharge was most profuse during the meal although sometimes it flowed out enough to soil the nostrils while at work. There was a perceptible bulging of the left parotid region. The patient's general health was only fair. Treated as above an uneventful recovery occurred in twelve days. One year later, however, the condition was as bad as ever, and a postmortem revealed a pouch full of a thin, brownish, pus in which was suspended here and there ground grains of oats and short fibers of hay. The auditive tube was found to be perceptibly more open than its fellow on the opposite side.)

Evacuating the guttural pouch through the fauces is a more difficult operation and in small horses can not be performed at all. It has been called staphylotomy because the incision into the pouches is preceded by this operation. It is only by first incising the soft palate from end to end that an access is gained into the pharnyx to incise the pouch. The operation is dangerous, difficult, complex and not recommended as a routine measure.

Abscess of the Maxillary and Frontal Sinuses.

Synonymy. Maxillary sinusitis; antrum abscess; nasal catarrh; dental catarrh; ozena.

Collections of pus in the sinuses of the head occur chiefly through infections traveling into them from the mouth. The channel is usually a dental disorder, in short, a decayed tooth. Aside from decayed molars, however, alveolar tumors, traumatism and cavities of extracted molars are sometimes found to serve as media through which putrid material travels into the sinuses. The channel is sometimes a fistulous tract large enough to admit feed into the sinuses or nasal fossae. At other times it is a small tortuous channel through a decayed molar. Foreign bodies, impactions of hay, pressed through open channels by mastication, surgical dressings carelessly left in the sinuses after operations or in the after-care, and pieces of bones broken off when driving out teeth or sloughed off from the inflammatory process following rough handling of the interior of the head, are so many other influences which are often found to be underlying factors in the causation of collections of pus in the facial sinuses In dogs it is always caused by a decayed third premolar. In cattle it may follow dehorning.

Treatment. Treatment must be preceded by a good search for the agent responsible, and whatever is found must first be removed. It is always wrong, and unfortunately a very common mistake of practitioners, to begin at once to trephine a horse to evacuate pus from the sinus without first having found the cause, for there is always a cause, even though it may not be apparent. If a tooth, it must be extracted or driven out; if a fistula, plans must be made to close it either by cicatrization or by plugging up with gutta-percha; if a tumor, it must be ablated; if a foreign body, this must be removed and the channel through which it traveled must be closed. The removal of the cause is the most important part of the treatment. It must be done first and done well, before attention is turned to the evacuation and local treatment of the overfilled sinuses.

The treatment of this abscess (or collection) may be dismissed in a few words. The cause must be removed, the collection must be evacuated and the cavity drained. To omit any one of these is equally wrong. There can be no permanent good derived from any treatment so long as the decayed tooth is not removed; there can be no success if the sinuses are left filled with pus in their anfractuous recesses, and the whole procedure will fail if a good permanent drainage is not provided. The practitioner must keep all of these facts in mind and act upon them or else continue to have an indifferent success in the treatment of these cases.

Trephining the skull gives access to the interior of the sinuses where the real curative work must be done. We may trephine to drive out a molar and then

use the aperture for other purposes. It may serve for the purpose of washing out pus collections or to give an access to the bottom of the cavity where another opening is made to drain the issues into the nose by gravitation, but trephining the surface of the skull alone must never be depended upon as a sufficient drainage for a collection of pus in the facial sinuses, because the aperture or apertures are proximally located in their relations with the filled cavity. The real operative work (after the cause is removed) that will cure a facial sinusitis is that of making perforations from the bottom of the pus cavity to the nasal cavity, imitating the rhinologist of humans who perforates the pus cavity via the nares. A veterinarian cannot do this because the sinuses are not accessible to such instrumentation, but he can, through the skull perforations made also for the other purposes, cut wide circular apertures into the bottom of the pus cavity (the sinus) that will permanently drain it. The skull perforations thereafter may be utilized to wash out the sinuses but the real agent that will cure the catarrh is the drainage aperture into the nasal fossae. When an operation has already been long and probably sanguinary from the surface trephining and the driving out of a tooth or the removal of some other cause, this perforation of the bottom of the pus cavity into the nose may be postponed until another day. In fact, two days later, after the blood clot and the accumulating pus has been washed out and the cavity carefully dried by baling out with gauze it is much easier to make these drainage apertures than at the end of the operation when everything is masked with blood. In the hospital practice this second operation is advised. In field work where a second visit may not be thought possible, in spite of the blood, these drainage apertures must be done forthwith and never omitted.

To drain the frontal sinus, the skull perforation is made so as to give access to the bottom of the cavity which may from there be punctured with the finger and then wadded with a good sized piece of cotton or oakum to widen it, making it permanent and at the same time controlling the bleeding. In draining the maxillary sinuses the operator may drain the superior and inferior maxillary sinuses separately or through a single aperture at the bottom of the inferior sinus. Sometimes the thin bony partition between these two sinuses is destroyed by the collection, in which case a single perforation through the wall that separates it from the nose, at its lowest level, will answer. If the partition between the two sinuses is intact and a single perforation into the nose is decided upon it is trimmed out with the rongeur forceps so that pus will flow from the superior sinus into the aperture.

With this feat accomplished a permanent cure is assured, where careful attention is given to the channel between the mouth and the sinuses made by driving out a tooth or other means. We find that failures to cure maxillary and frontal abscess in horses are due to the following causes:—

(a) Refilling of the sinuses with pus because there is no drainage into the nose.

(b) Delayed closure of channels between mouth and nose due to the great size of the channel made with the punch, old age, and improper attention to the tooth cavity, particularly allowing it to impact with food.

(c) Sequestration of bones due to physical drainage and damage from inflammation caused by infection during the operation or the after-care.

(d) Broken bones, desiccated pus and surgical dressings overlooked in the sinuses.

(e) Neglected cases, where operative treatment was postponed too long and great areas in the interior of the sinuses are denuded of periosteum.

The care of a horse treated by trephining and drainage as above recommended consists of daily copious irrigation of the sinuses with a one per cent solution of zinc sulphate, with a fountain syringe. The holes are loosely wadded with oakum to keep them from contracting too soon and to prevent dirt from being drawn into them. These wads must, however, be large enough to prevent them from accidentally slipping into the sinus, where they are too often over-looked and left to cause further trouble. After ten days the holes may be allowed to close unless the discharge is still fetid and copious, in which case they are kept open some days longer. The alveolar cavity, when a tooth has been driven out, must be carefully wadded to prevent food pressing into the sinus.

Queries and Answers

The editors will reply to queries appearing here, as they are able and as opportunity permits, but they do not want, nor cannot undertake to monopolize this portion of the department. Any reader who can furnish further and better information in reply to any query is urgently requested to do so. Where the treatments advised in these replies is adopted it is hoped that those employing them will report their results whether good or bad. In all cases give the number of the query when writing anything concerning it.

QUERY No. 324—I have under treatment a two-months' old colt that was gored by a cow one week ago. The wound is of the muscles at a point two inches below the ischial tuberosity. The colt walks with the foot of the affected leg turned backward and weight is borne upon the dorsal portion of the fetlock. If the foot is passively placed in position, the colt will then stand on it, but as soon as the colt walks, the foot is dragged forward and not extended in the normal weight-bearing position. What is the cause of this peculiar condition?—T. B. D.

REPLY: The peculiar manner in which this colt's limb is held is probably due to injury of the biceps femoris muscle. The injury, in this case, involves its proximal portion and since this muscle is active in extending the leg, we may expect the colt to assume the position described as long as contraction of the muscular fibers of the biceps femoris occasions pain.

QUERY No. 325—Recently my attention has been called to some cases where hogs have taken sick suddenly and have died within a few hours. The first case was in Clayton, Mo., where a man had some of his hogs running in a wood lot through which a stream ran. Various kinds of trees, shrubs and herbs grow there. Among them is the locust tree. To most of the hogs he had been feeding garbage. He reported his loss thinking it was cholera. I found no sick ones on the premises, but from his description of the symptoms, it sounded like a form of poisoning from such plants as the poison hemlock or locust. He finally brought a hundred-pound sick pig for examination. Its temperature was normal. It was very nervous. Its eyes were highly injected and moved constantly. When it attempted to walk, it staggered. It was bled and autopsied. The only finding was a very much inflamed stomach. Five veterinarians were present, of which three diagnosed forage poisoning.

Another case was in eastern Illinois. It was diagnosed as hemorrhagic septicemia because of petechiæ on the lungs. The hogs had been vaccinated six weeks previously. Seven out of a litter of nine pigs died. Two recovered. These pigs sickened in the morning and died before ten o'clock. The veterinarian who held the autopsies found petechiæ on the lungs and a severe inflammation of the stomach. When he cut the stomach open, the mucous membrane clung to the food. These pigs with others had been allowed to run in the woods where various herbs and shrubs were just beginning to sprout and where acorns lay on the ground. The other hogs had been fed on a milk diet. The ones that died were not so thrifty, so evidently they were more eager for green food.

Cattle are lost from cornstalk poisoning because a poisonous substance develops during wet weather in the corn stalks.

Is it not possible that acorns at certain periods of the year would develop a substance which might be poison to hogs?

Are there other common herbs which might be poison to hogs in the early spring?

E. C. W. S.

REPLY BY DR. L. H. PAMMEL: With reference to hog poisoning in Clayton, Missouri, there are a number of early spring plants that may produce poisoning. One of the plants which has frequently been suspected of this kind of poisoning is cocklebur. Other plants, like cowbane (*Cicuta maculata*) might easily cause poisoning. I have asked Dr. L. E. Willey, of the Veterinary Division, to comment on the portion pertaining to hemorrhagic septicemia. He writes as follows:

"It would appear to me that the clinical diagnosis of hemorrhagic septicemia was not confirmed by laboratory examination or animal inoculation.

"In view of the fact that these animals are designated 'pigs' and 'litter' the assumption therefore is that these animals were possibly suckling pigs.

"It is a recognized fact that if these pigs were given the anti-hog-cholera serum alone, the immunity would not be expected to last more than three weeks, and even if given the serum and virus before weaning the immunity is not permanent, as would be expected if the treatment was properly applied after weaning."

QUERY No. 326—At this season of the year (September) we are called on to treat sore necks and shoulders of draft horses. These are presented in all forms. Some are due to abrasions or to being pinched by the collar and to various other causes that farm horses are subjected to during fly time. Some have sinuses three inches deep while others have raw surfaces the size of a dollar or thereabouts and the swelling extends down to the sternum. Cases that prove fatal show a rise in temperature of from one to three degrees Fahrenheit, and loss of appetite, the eyeballs are prominent and the conjunctiva is swollen and protruding beyond the margins of the eyelids. Death results in from one to five days. Has anyone a treatment?—O. D. C., Oklahoma.

REPLY—The treatment of collar galls and "sore necks" varies somewhat with the depth of the wound and depends on whether or not the animal may be kept from work for a time.

As these conditions generally occur in the summer time, protection from files is necessary in all cases and particularly in cases occurring in Oklahoma.

"The Itinerant Horse Physician" has the following to say about the prevalence of flies in South Dakota: "My brother and I termed South Dakota 'the fly state' and it is a good name for it. There seem to be more flies in South Dakota than anything else. I have gone into a restaurant and had dinner served and left most of it untouched because the flies bothered me so I could not eat." But, in the vernacular, it hasn't anything on Oklahoma, which in my experience produces more individuals and more species of flies than any other spot of equal size in the temperate regions, and the appetite, persistence and ingenuity and pure deviltry of Oklahoma flies are proportionate to their number.

It is not unusual for these sore necks that occur at the top of the neck to present a sinus extending downward from one to three inches; if they go deeper than this, they come perilously near being genuine fistulas. Where these sinuses are not treated by the farmer, they may contain little other than tissue detritus, but where they are treated, as most sore necks are, with emollient dressings, they are almost certain to contain deep in their recesses hairs from the mane, epidermal scales from the surrounding area, particles of dirt and even gravel, which have been caught in the "salve" and then worked to the bottom of the "pipe" by the movement of the parts when the horses work or when they are fighting flies. In addition to protection from the flies, wounds so contaminated must, of course, be freed from these foreign bodies. "Sitfasts" if present must, of course, be removed.

After this, clean collars, cleaned at least twice every day, smooth metal pads at the top and no sweat pads, are requisites if the horse must work. At noon, and at night when the animal is unharnessed, the neck and shoulders should be washed. Cold water to which a little soap has been added should be used. An astringent liquid application applied locally will hasten healing. Alum water, dilute solution of tannic acid in alcohol or saturated solution of potassium permanganate are advisable.

As a preventive, clean collars, shoulders washed daily when the harness is removed in the evening and the application of a saturated solution of alum or of tannic acid in alcohol, are effective.

As for the cases the querist refers to as presenting great swelling that extends down to the sternum, a rise in temperature and terminating fatally, that is "something else again"—apparently, one might almost say with certainty, malignant edema. Collar galls and sore necks furnish likely portals for the entrance of this infection. The symptoms, course and termination given by the queriest point to malignant edema.

The protrusion of the eyeballs and the inflammation of the conjunctivæ are only incidents in the progress of the constitutional disease which lessens the animal's tendency to fight off flies, and the eyes are attacked by these insects in great numbers with the results described. Any other constitutional disease that depressed the animal and rendered it indifferent to the attack of flies, where these pests are numerous as they are in the querist's state, would present the same eye symptoms.

QUERY No. 327—Will some one outline a practical treatment for jack sores of long standing?—R. G. S.

REPLY BY DR. D. M. CAMPBELL.—I have little faith in a treatment as being of more than temporary value if applied in the summer time. A tenacious paste made up of zinc chlorid, one part, and starch, three parts, with just enough water to enable one to work it, applied carefully to the surface of the sores without touching any healthy tissue, will ameliorate the condition.

QUERY No. 328—Why are the galenical preparations so named?

C. J. M., Ill.

REPLY: The following from the *Merrill Messenger* answers this query and at the same time gives valuable biographical data concerning the famous physician whose name has been given to fluid extracts and tinctures:

"To Galen, the Greek physician and ardent disciple of Hippocrates, must be given the

honor of first proving the true value to medical science of plant drugs. His use of these caused him to become the most eminent physician of his time and to be regarded even today as one of the greatest pioneers in medical science.

"Galen did not allow himself to be confused by the differences of opinion existing between physicians of the various sects which flourished at that time, but, gifted with genius and with boundless faith in himself, he chose from each sect the principles and practices which appealed to him and rejected the rest.

"At the age of thirty-two, already famous for his medical and surgical skill, Galen went to Rome, and here, among the hundreds of medical fakirs and so-called specialists, he performed cures in all the branches of medical science, winning both fame and fortune. So successful was he that though attacked from all sides by his jealous enemies, he became the most famous practitioner of Rome, and was looked upon as a worker of wonders.

"Galen spent much time in travel and in investigating the properties of the medicinal plants then in use. He wrote numerous works on medical subjects, and the best evidence of his abilities that can be offered is that his doctrines prevailed for centuries, and today we bestow the name 'Galenical' to that large and most important class of medicine having botanical origin."

QUERY No. 329—I am sending a growth or wart pulled from a cow's teat. These warts have been growing on the teats for six months. There are about fifteen on each quarter, most of them scattered over the teat to the extreme end. I have tried pulling them out and applying olive and castor oil but without favorable results. The cow had to be turned dry. I have never seen nor heard of anything like this condition before. The growths vary in size. Can you suggest a treatment? O. D. C.

Reply: Such cases may be treated by local applications of arsenical paste. Arsenic trioxid and flour in proportion of one to four or five, adding enough water to make a paste, may be used. This may be applied locally as conditions seem to demand. Three or four applications should be sufficient in the average instance. If the warts are large they may be removed with scissors and hemorrhage controlled with a cautery. The internal use of full physiologic doses of Fowler's solution of arsenic ought to be employed in conjunction with the local treatment in the more difficult cases. As much as one ounce of Fowler's solution may be given daily and this continued for a week.

QUERY No. 330—I have not had the best results in colt castration and should like to know where I am at fault. The castrated colts swell greatly in the scrotum, some in the prepuce, and occasionally the penis also becomes greatly swollen and phimosis results. I also get quite a little primary hemorrhage in about one colt out of every ten. I usually castrate in the late spring and early fall and give special care to asepsis and antisepsis. I handle colts both in the standing and the recumbent positions, always making free incisions to allow ample drainage. I have used six different emasculators with about the same results regarding hemostasis. I have also employed ten per cent sterile camphorated oil in the scrotal incisions but all to no avail. —W. H. N.

REPLY BY DR. J. V. LACROIX: Post-operative swellings are due to infection which gains entrance into the wound at the time of operation or subsequently, and consequently if the instruments are sterile and the operator's hands clean and the castrated animals are not allowed to remain in filthy stables or pens immediately after castration, no swelling of consequence ordinarily results where a suitable incision for drainage is made. The only exception to this is in cases where animals are devitalized and prone to suffer edematous swellings because of a sluggish circulation, or where animals are exposed to inclement weather several days at a time after having been castrated and because of lack of exercise together with the devitalizing effect of cold weather, swelling may result. The use of oils whether antiseptics of any kind are incorporated or not, serves no good purpose ordinarily. The only good that occasionaliy results from such practice is that primary union of the scrotal incision may be prevented in cases where the depths of the wound have been contaminated during castration. In such instances because of the fact that the oil and the adherent dirt prevent healing by first intention, there is no interference with the discharge of infected wound secretions and consequently a minimum of swelling results. The primary hemorrhage occurring in ten per cent of cases handled is of no moment unless, of course, hemorrhage is considerable in the animals that bleed. Since you have used so many different emasculators, and as bleeding occurs only in about one out of ten cases, hemorrhage is not to be attributed to faulty design of the instruments. While you do not so state, it is probable that this primary hemorrhage is venous in character and practically subsides as soon as the subject is allowed to rise from having been cast, or the bleeding is not profuse in those handled standing.

Department of Live Stock Poisoning

By L. H. PAMMEL, Ph. D., Ames, Iowa
Professor of Botany, Iowa State College

It is the intention of the writer to use these columns to discuss the subject of poisonous plants. I shall, therefore, be glad to have readers of the American Journal of Veterinary Medicine send specimens of alleged poisonous plants to me. The queries will be given prompt attention.—L. H. P.

Poisoning from Lima Bean

PROFESSOR N. E. HANSEN, of Brookings, South Dakota, calls attention to the recent importation of large quantities of the small Lima bean or Burma bean ino South Dakota. These were sold for navy beans and they contained dangerous amounts of prussic acid. This small Lima bean is a form of the common Lima bean and approaches the wild form of Brazil. Some years ago in my Manual of Poisonous Plants, I published the following note:

"Several cases of poisoning from the use of Lima beans are reported. L. Guignard, according to an abstract in the Experiment Station Record, has determined this to be due to hydrocyanic acid. He says 'A number of forms that have been described as distinct species are by the author believed to be varieties of cultural forms of *P. lunatus.* Those principally studied were the white and colored Java beans, Burma or white Indian beans, Sieva beans, Cape beans, which are extensively cultivated in Madagascar, and Lima beans. These different varieties are widely cultivated and extensively used as food, although a number of fatalities have been attributed to their use.' Descriptions of the different varieties and detailed reports of the chemical studies are given.

"Practically all varieties of *P. lunatus,* whether wild or cultivated were found to contain the principle which when acted upon by an enzyme yields hydrocyanic acid. The proportion of hydrocyanic acid varied from almost inappreciable amounts in some of the more improved forms, like the Lima bean, to as much as 60 to 320 mg. per gm. dry weight in certain varieties of Java beans. It was found impossible by cooking to remove all the cyanogenetic compound in Java beans. Prolonged boiling extracts the greater part, but it is merely withdrawn and not destroyed, and if the water is absorbed it presents the same danger as the beans themselves, since either in the alimentary tract or in the blood are sufficient ferments to act upon the dissolved glucoside, resulting in the liberation of hydrocyanic acid."

Of course this Burma Lima bean will not mature in South Dakota. There is some danger that the seed not used for seed will be sold for food as they are much cheaper than the lima or navy beans.

The present importation of beans came from India by way of British Columbia into the United States. Most of these were sold in Minneapolis under the name of a smaller bean just as good as the navy bean and cheaper. In some cases they were mixed with navy beans. This is a violation of the Federal food law.

Dr. N. E. Hansen, of Brookings, S. D., first had them sent to him from several different places in South Dakota. Dr. Hansen sent some of them to Washington for analysis. I understand that they were also analyzed by the chemist of the South Dakota experiment station. Here is the letter from the authorities in Washington to Dr. Hansen, by D. N. Shoemaker, of the Bureau of Plant Industry. I take the liberty of using this letter in this connection.

"In further reply to your letter of May 29th, the sample of beans which accompanied your letter are undoubtedly the Burmese Limas. The Bureau of Chemistry officials say that these have shown consistently about 20 milligrams of cyanogen to 100 grams of beans.

"I am enclosing one other sample, which is all I could obtain of these eastern Asia Limas. The Bureau of Chemistry officials have informed me in regard to European regulations about as follows; that before the war most continental European countries had regulations forbidding the importation of *Phaseolus lunatus* from the East Indies or eastern Asia, unless accompanied by a sworn statement as to the analysis showing the possible content of cyanogen; also that all countries had regulations forbidding the importation of beans above a certain content. Moreover, the soldiers are not at present being fed any of these beans, so that, although the food situation is acute, yet the military authorities are passing up all of the Asiatic lunatus at present. This may account to a certain degree for the arrival of these beans in the United States. The importation of these beans has never been attempted in this country until very recently. The Bureau of Chemistry has found sufficient warrant in existing laws to turn aside a number of shipments, although the one which has reached the middle west apparently got by before it was picked up.

"According to Mr. Viehoever of the Bureau of Chemistry, the danger from these beans is somewhat as follows; the dangerous material in the bean, being phaseolunatin, which is a glucoside capable of splitting down in the presence of certain enzymes and releasing cyanogen as one of the products of this reaction. In the ordinary preparation of beans for food they are soaked over night, which moisture would release a certain amount of cyanogen into the water. This would be poured off. The cells in the interior of the bean, however, would not be sufficiently reached by the breaking-down process so that a considerable amount of glucoside would still be left in the bean when boiled for food. This boiling then kills the enzyme present in the bean; the glucoside being eaten with the bean may find in the intestinal tract an enzyme capable of performing the same function as that originally present in the bean, so that there is the danger of having sufficient cyanogen released after eating the beans to cause them to produce illness, if not death. I might say that a few of the colored mottled limas grown in the southern states do show a certain content of this glucoside, but rarely over 6 or 7 milligrams per 100 grams.

"Regarding the other samples of these East Indian beans, apparently the most dangerous one of all is usually known as the Java bean. We have planted this at Arlington Farm here and find that it is too long seasoned for full development in our climate here at Washington. I am sorry we do not have on hand any sample of this Java bean."

Poisonous Sneezeweed From Mississippi

Dr. W. H. Ewing, of Jackson, Mississippi, writes as follows:

"Just noted your article in the AMERICAN JOURNAL OF VETERINARY MEDICINE relative to sneezeweed. I am sending you, under separate cover, sample of this weed which we are having a serious time with here. We have had a long dry spell and grass is scarce. We have more or less of this weed scattered through the grass. I know of one instance where one small load of hay caused the death of four horses and serious illness of several others. I have two cases now of poisoning from hay from which I took samples enclosed. As you will see there are no blossoms on this weed. I had the impression that it was only poisonous when bloom was on."

The sample Dr. Ewing sent contained sneezeweed, probably *Helenium nudiflorum*, which is common in the south.

Suspected Alfalfa

Dr. F. P. Jones, of Fairview, Oklahoma, sends a package of alfalfa hay and the following letter:

"Am sending some alfalfa by parcel post taken from hay that some horses had been eating that died as if by some kind of poison. Please analyze it for me and see if it contains any poison of any kind."

I have been unable to find any injurious or poisonous plant in the hay. It seems also to be very clean. I do not find the spot disease which sometimes is common, so that it is not responsible for the trouble. Fresh alfalfa sometimes causes bloat. This, of course would not occur, I think from the hay sent to me. Some of the stems are slightly spotted with what appears to be a bacterial disease, but there is not enough of this to cause the trouble. I think there must have been some other cause for the death of the horses.

Supposed Poisonous Members of the Purslane Family

Dr. R. A. Button of Tacoma, Washington, sends the following letter and a specimen which it was thought, produced poisoning.

"I am a constant reader of your department in the American Journal of Veterinary Medicine and the other day I ran across some queer cases. I diagnosed them as being due to some poisonous weed. It being night when I was called, I did not have a chance to hunt the pastures, but one of the men brought this weed and asked if it was poisonous, so I will send it.

"The symptoms were a comatose condition of the subjects, blood running from the nostrils, temperature 106° F. Another case presented the same symptoms, but with

a temperature of 105°. Both were in young calves six to eight months old. Other animals were in the pasture, but only these two were affected."

The specimen proved to be a species of Montia, closely related to *M. chamissonis* I have noted in my Manual of Poisonous Plants that the bitter root *(Lewisia rediviva)* as well as a species of *Talinum* of the same family, are acrid plants. In localities where this plant occurs one should find, as Dr. Button says, the western cowbane *(Cicuta vagans)* which, of course, is very poisonous.

Bloating From Sweet Clover

H. S. Coe in a paper on sweet clover utilization* calls attention to the occasional bloating when animals are pastured on sweet clover. He states that only a few cases of bloat have been reported and that only during the summer of 1915. This season was abnormally wet. Some have held that the comparative freedom from bloat is due to the presence of cumarin in the plants. If the bloat is not severe, driving the cattle at a walk for a quarter or half hour will help. In urgent cases the gas must be allowed to escape without delay and this is best accomplished by the use of a trocar. In the case of sheep bloat it can be quickly removed by a small trocar. Mr. Coe notes that milk may be tainted occasionally when cows pasture on sweet clover. This trouble is experienced for the most part in the early spring. This excellent bulletin contains much valuable information about sweet clover.

Chickweed, Sumach and Buttercup

Dr. C. E. Lucas, of Olney, Ill., sends the following interesting communication:

"Under separate cover I am sending you two specimens of plants. On June 19, 1917, I answered a hurried call to a farmer's place to see a cow. On arriving found the cow dead in the pasture. As this cow was only sick two hours I was sure it was due to some poisonous plant. I looked the pasture over and all I could find was the sumach I am sending you. You could see that it was stripped of its leaves and stems.

"On May 12, 1917, I was called in consultation with Dr. Case and found his client had lost four cows within six hours. They were running on bottom pasture, practically all weeds, some cockle bur, but the stomachs were full of the plant, a sample of which I am sending you. This plant was in bloom then and had a yellow flower. Some call it wild buttercup."

The specimens sent me by Dr. Lucas, referred to as sumach, are known to the botanist as *Rhus glabra.* The yellow flowered crowfoot was not included. The small leafy green plant is chickweed (*Stellaria media*). In regard to the poisonous nature of the sumach, I do not recall that cases of poisoning to cattle have been reported. There is, however, an impression that the red berries of this species are injurious to man. The common sumach is common in many places in the northern Mississippi valley. It contains a large amount of tannic acid. It is so rich in this substance that it has been proposed to use it for obtaining this material. If it was the cause of the poisoning it must have been tannic acid poisoning. The chickweed is common in many sections of northern United States. I am glad to know that this plant is suspected of being poisonous to larger animals. The proof, of course, is not positive. I have this note in my *Manual of Poisonous Plants.*

The seeds of common chickweed are used as food for cage-birds and are also readily eaten by chickens, but, according to Mr. Wm. Carruthers, they cause disorder to the digestive system when eaten by lambs in large quantities.

The plants of this family has saponin like substances. One plant of the family is used as a forage plant, the Spurrey (*Spergula arvensis*). The chickweed is related to corn cockle and cowherb, which are known to be poisonous.

Alsike Pasture and Forage Poisoning

Dr. J. G. Reid, of Exeter, Canada, sends the following letter in regard to a disease appearing in horses pasturing on fields containing alsike clover. "A client of mine has a field from which he cut a grain crop last year and did not seed down, but this year timothy, blue grass, red clover, alsike clover, etc., are growing abundantly. On June 18th I was called to see a young mare pasturing on this field with eyes sore and pus in them, skin around mouth and nose dry and hard, like parchment, left hind leg with a thin yellow discharge oozing out of the skin back of the fetlock, like in grease heel with swelling and soreness up the lymphatic vein, temperature 102° F. Two days later two other colts pasturing in the same field came to the stable in the morning with swelling and soreness up the lymphatic vein of one hind leg with some cracks and a little discharge under the fetlocks. Their appetite remained good. What would be the cause and treatment for this condition?"

I do not know whether the symptoms quite correspond to those given for the alsike clover disease described by Dr. Jacob Moses and Professor A. M. Harcourt, of the Tennessee Agricultural Experiment Station.

They describe the symptoms as follows: On

*Farmers' Bull. U. S. Dept. of Agr. 820:9.

the skin are inflamed areas, appearing at first as more or less rounded swellings, varying from one-half inch to five or six inches, or more, in diameter. The hair over the affected areas stands erect, and has a dull appearance, indicating loss of vitality. Later the skin becomes hard and puffed out, as the result of the formation of pus underneath. Finally, the deadened skin is cast off, leaving a deep, raw, angry-looking ulcer, which eventually heals, with the formation of a conspicuous scar, covered with more or less white hair. These changes in the skin may occur on any part of the animal, but especially on the limbs, body and croup. The eye symptoms consist of a marked conjunctivitis, with swelling of the eyelids, sensitiveness to light, and a watery discharge from one or both eyes. The mucous membranes of the mouth become inflamed (stomatitis), ulcers form and the animal slobbers and refuses to eat. The advanced cases are frequently accompanied by emaciation. The tongue is usually affected, and the inflammation may extend throughout the entire digestive tract. The functions of the liver may be disturbed and a yellowish (jaundice), coloration of the tissues follows. In such cases symptoms of colic are not uncommon and the respiratory tract may become involved and pneumonia develop. Some observers in other countries have noticed marked nervous symptoms, such as excitement, convulsive movements, paralysis at times becoming generalized, the animal getting down and being unable to rise. In the cases observed in this state, the nervous symptoms, except the general depression, were not very noticeable.

A Further Note on the Burma Lima Bean

In conversation with one of the students of the Fort Snelling Officers' Training School, I learned that some of the members of the school were sick from eating some of the Burmae or Burmah Lima beans. Dr. N. E. Hansen, of Brookings, South Dakota, makes further comment on these beans, as follows, from the Davenport Democrat, Davenport, Iowa, July 15, 1917:

"The poisonous beans from East India are raised very cheaply in Burma. If allowed into the United States they would cripple or destroy our bean industry. The beans contain a glucoside called phaseolunatin also an enzyme. When soaked in water the enzyme attacks the glucoside and breaks it up into cyanogen or prussic acid. Pouring off this water helps, and further enzyme action is destroyed by boiling, but there is always undissolved glucoside on the inside of the bean. When eaten the glucoside may not be attacked by some enzyme from the other food in the stomach. If there is no enzyme present, the beans may be eaten safely. But the next time some enzyme may be present in the other food which will change the glucoside into prussic acid with serious or even fatal results.

"With all possible care taken with these beans, some years there is so much glucoside present that the beans cause wholesale poisoning in India. Although very cheap these beans are so dangerous that the military authorities of France and Germany and other European countries forbid their importation; especially at this time they take no chances, as their people are weakened by lack of food.

"The Burma beans, although about the size of a good sized navy bean, have a faint yellowish tinge with many fine lines or rays out from the eye like the spokes of a wheel. There are some colored ones of light brown, dark brown, mottled and speckled, various shades of brown and red brown. There is also a form of small lima from Burma, but flatter, having the same characteristic rays out from the eye. They are equally poisonous, but at least cannot masquerade for the navy bean. I can send you samples only of the white Burma, of which six carloads or about one-half million pounds came into this country by way of Japan and Vancouver, B. C. So far I have heard of three cases of poisoning—one family at Ellendale, N. D., a crew of men at Medora, N. D., and a mother and child here at Brookings. None of these were fatal. There is a case recorded at Rotterdam, Holland, in 1905, where a man and three children died in 11 hours; two children in the same family were taken violently ill but recovered."

Aconite of Aconitum or Monk's Hood

J. K. Thum, in his review of advances in pharmacy, states: "Of the vast number of the *Aconitum*, and there are at least 150, only two or three have been examined pharmacologically. Notwithstanding the fact that all those examined show the same characteristic results on the nervous system, secretions, circulation, and respiration, yet they may be divided into two classes. One of those examined acts principally on the circulation, and the other on the respiration. Those containing aconitin belong to the first class and those which contain pseudoaconitin belong in the other class. *Aconitum Napellus* is the most efficient of the aconitin class. To the other class belong *Aconitum heterophylloides* and *Aconitum magarum;* these can be conveniently referred to as the pseudoaconitin group."

In every work regard the writer's end,
Since none can compass more than they intend.—Pope.

POINTED OPINIONS by Readers ON LIVE TOPICS of Veterinary Medicine

It is in reports like those of this department that the current history of the progress of veterinary science is written. Are you leaving a record of your experience which will help others, as you have been aided by these and other clinical reports? If not, you are earnestly invited to contribute from your experience that this department may be of the greatest service to its readers. By so doing you will earn the thanks of the editor, the approval of the veterinary profession and the lasting gratitude of those who are aided by your suggestions.

Transporting War Horses to France

I MADE my first trip, December 10, 1914, leaving Newport News, Va., for France and arriving at La Pallice, France, on Christmas morning. The horses were unloaded Christmas morning and I left for the United States the following morning. We had 1,200 horses on board.

I made five trips where we carried only horses and we generally remained in port only about three days to load and one day to unload. I also made six trips where we carried horses and general cargo in addition. When a ship carries only horses, as a rule there is a great deal of rocking. A light ship on the high sea is like a cradle in a tree, and one can imagine what a poor horse has to go through on one of these rocking trips.

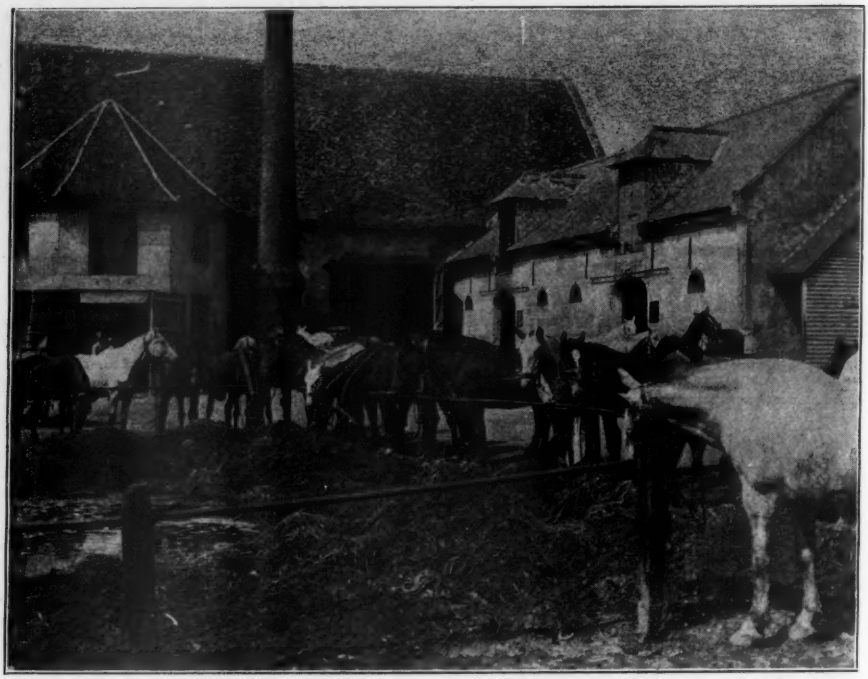
These horses were supposed to be allowed a space of two feet and six inches wide, by eight feet deep for each, but I have made trips where I had only 1,207 spaces, and the ship was loaded with 1,256 horses. At that time the steamship owners received $60.00 for every horse that went aboard, and it made no difference if they all died fifteen minutes later. I have had three horses dead before the ship left the dock with inspectors right on the dock, and when I have mentioned the fact that horses were dead while the ship was at the dock, I have been politely told to keep my mouth shut as the owners would lose the $60.00 freight on each dead horse. I did not mention this to the inspectors because they were paid to find it out for themselves, and I had plenty of trouble after going to sea. Moreover, my work did not start until the ship left dock, and what transpired while the ship was in dock was not supposed to concern me.

I have seen the time when horses were five days on the road from the west, were unloaded to be watered and fed, reloaded and sent to Newport News, where they were unloaded and driven on ship. I have seen horses drop from heat exhaustion by the dozens while the ship was in port. If there were 1,200 horses shipped from the west in one shipment and they were all living by the time they arrived at Newport News, they were all put on board ship, no matter in what condition they were. At that time there was no stock yard for the sorting of horses.

The British government handled their horses in a much better manner, because they had their own veterinarians where the buying was done, where the horses were sorted and on their ships. Their requirements on board ship called for ten per cent. surplus stalls, one man to every ten horses and one foreman to every ten men.

I have known of some trips where there were only forty-six men to take care of 1,256 horses, and in some instances one man was taking care of over sixty horses. The reason why there were so few men was that the skipper did not want to carry over ninety-nine men (including his crew), as more than that number would necessitate his carrying a physician (these are British laws).

On one of my trips carrying 875 horses and a general cargo of about nine thousand tons freight, we left port three inches lower than our water mark, and the second day at sea we got into a gale that lasted for over five days. All the wooden fittings on the top deck were blown away and 103 horses went overboard. The sea was so high that it washed over the top of the ship and the hatches had to be closed. The horses in the hold were not watered and fed for over thirty-six hours, and some of the hatch covers remained bat-



YARD OF A HORSE DEPOT, OISE REGION, FRANCE. French-Official.

Note the conformation of the horses, more of the draft type than was formerly thought desirable for military uses, also that gray horses are present. The scarcity of this useful animal has compelled military authorities to take this color, undesirable because of its conspicuousness, but they are not gray when they reach the front. Camouflage is applied to horses as well as to guns and men. Note also the buildings typical of the country, all of fire-proof construction with slate roof and walls of solid masonry.

tened down for over seventy-two hours. Is it any wonder that we have plenty of spinal meningitis with such conditions to contend with?

I will not go into details of the various diseases that we met, but I think all the diseases from a toothache up to small pox have been reported in France as occurring in horses on trips across the ocean.

I am sorry to say that the veterinary profession has been treated unjustly by the shippers of horses to France. In the first place there were very few veterinarians employed by them. Some of these shippers would not employ a veterinarian. What is to be thought of laymen signing their names as veterinary surgeons and turning their reports over to the French government veterinarians? I remember on one trip, when I arrived at France, a French veterinarian came on board ship to see me, and the first question he asked me was if I had any glanders or contagious pleuropneumonia abroad. I laughed at him and asked why. So he told me that a ship arriving the day before had these two diseases reported by the veterinarian in charge. I thought I would like to get a look at this veterinarian who had had this trouble on his ship, but after meeting the man, I was convinced he was no veterinarian. I told the French veterinarian about it, and he mentioned that he had met with similar cases before.

The French government does not pay for horses now until they have been on shore for five days. There have been cases where over 250 out of 1,000 horses died in less than the five days.

I have made eleven trips to France and eight trips across the English Channel since the war started. On the last trip I left France, May 29, 1917. The following day we met a submarine and she sent a torpedo and twenty shells at us. We fired seventeen shells at her and our marksmanship was no better than that of the crew of the submarine.

JOHN H. SWEENEY, D. V. S.
Walkerville, Ontario.

WOUND DISINFECTION AND SEALING

In the last August issue of the JOURNAL, I read the article by F. B. M., of Canton, Pa., in regard to treatment of infected fractures. The doctor should not keep his full name from the article, for it is commendable. A large percentage of compound fractures in the larger animals prove fatal as results of gangrene or septicemia. I have had the same experience myself.

Of late in compound fractures when the skin wound is not extensive, I have tried what might be called "sealing up" the wound after producing as nearly aseptic or antiseptic a condition as possible. In some instances, I have swabbed out the wound with iodin and in others have used irrigation to produce asepsis. I then cover the wound with either bicarbonate of soda or dusting powder and work a quantity into the wound. I next seal with cotton and collodion and leave intact as long as necessary. In fact, I never aim to see the wound until it is healed up.

I got the idea from treating open joints which I seal in the same manner. I do not know whether they seal wounds in the war hospitals in Europe or not, but since the advent of "Chlorazene" wound asepsis is an easy matter to obtain and sealed wounds will be much more in vogue. I employ the same means in small flesh wounds with success. In one of these I used a plaster cast to hold the wound in apposition. The healing was perfect after two weeks. Phylacogen was used as an adjunctive treatment. How about wire cuts on the foot? I haven't tried it. Let's try it and find out, using a plaster cast, also vaccines.

Mt. Sterling, Ia. C. F. NEIS, D. V. M.

COAL IN THE VAGINA OF A MINING MULE

On September 20th I was called to a local coal mine to see a mule. The history was that the mule had suddenly commenced to kick and squeal and acted as if a stud was teasing her, even when she was eating. I at first thought it might be an ovarian cyst and I advised spaying.

Then the corn cob trick reported in VETERINARY MEDICINE (page 39, January issue), came to my mind and I made an examination of the vagina, where I found several lumps of coal. Somebody had inserted coal there, and a large ulcer had formed inside. I irrigated the vagina thoroughly and afterwards used oil treatment. She got along nicely.

I offer this for the benefit of veterinarians that are called upon to treat mine mules.

W. H. MAY, V. S.

FIBROUS GROWTH ON THE SHEATH OF A HORSE

I was called one morning this summer to see a sick colt, and on my arrival I found the colt to be suffering from a scrotal hernia. After I finished my operation on the colt,

the owner (seen in the picture), brought a horse out for me to examine. I found the enlargement as shown in the accompanying illustration to be a "fibrous growth" at the point of the sheath. The owner claimed this

growth came on when the animal was two years old—it is now fourteen years.

Thinking this would make a good picture, I snapped it then and there, and seeing some-

thing like it in the October number of VETERINARY MEDICINE, I was prompted to send it in.

Five other veterinarians had been called to attend this horse prior to my seeing it, but none would attempt treatment, which I think would be major surgery. As may be seen from the illustration, the animal is in perfect health except for this unsightly growth. It offers no impediment except during micturation when the urine runs down the enlargement.

Bothwell, Ontario. A. ROOKS, V. S.

THE USE OF WATER IN TREATING FISTULA OF THE WITHERS OF HORSES

I read some time ago of a veterinarian advising the use of cold water irrigation with pressure or force for deep wounds, fistulas, etc. Having city water with pressure, I decided to try this method on a six-year-old horse brought to me to be treated for a fistula of the withers of three months' standing.

I incised both sides, and about a pint of pus was discharged. I inserted the hose in one of the incisions, and the force of the water going through caused it to spurt ten feet away from the incision on the other side. I used this treatment daily for ten minutes at a time. The amount of pus discharged gradually became less, also the swelling, and in forty-two days nothing remained but a little enlargement on both sides and the incisions, which were healing fast. I might mention that after about twenty-five days of the treatment no water would be forced through from one side to the other, but would come back, indicating that the opening had probably healed inside.

When the case was brought to me, the horse could not get his food or water from the floor, but had to be fed and watered in a high manger. I do not know if this would be a good treatment in all cases or if surgical interference would effect a cure sooner. Probably someone else may wish to try it, and if it is a good treatment it will do away with a bloody operation. I shall try it again on my next case for experiment and may then be better able to judge as to its merits. The force of the water penetrating every part would very likely separate all loose tissue and wash out all the pus. I should be pleased to read reports from others after they have had an opportunity to try this treatment.

WALTER LAWSON, D. V. S.

Hollister, Cal.

Comments: In the past, veterinarians have employed means similar to those described by Dr. Lawson, wherein force pumps were used to inject weak antiseptic solutions. With comparatively few exceptions, we believe that results have been very unsatisfactory. It is certainly not in keeping with present day surgical methods. Experience has taught that the forceful introduction of water in fistula of the withers usually serves to encourage the invasion of sound tissue by pus-producing organisms. This is enhanced by the separation of tissues by the forceful introduction of water and also its gravitation. Where facilities for spontaneous evacuation of wound secretions and other fluids do not exist, their retention in fistulous withers usually provokes much harm.—Eds.

AZOTURIA AFFECTING THE FORE-QUARTERS

I was called out to a place six miles from town to see an animal which the owner said in telephoning, was very sick. Upon arriving at the place I found a bay gelding weighing about 1,200 pounds, lying down and looking quite well. I got the animal up and found that he was very much swollen around the chest and shoulders and this swelling was very hard. He walked a little stiffly, but aside from the stiffness and swelling one could see very little that might be considered abnormal. The owner now stated that he left a place about seven miles from home that morning to go home, but had only gone about four miles of the way when the horse became stiff and began to sweat very much and was much slower than usual. He got the horse home and sent for me. In the meantime the horse had voided a large amount of very dark and thick urine which the owner said looked like coffee.

I used the catheter and drew a small amount of very dark urine. I decided that this was a case of azoturia in which the horse was affected in the fore-quarters instead of in the hip or gluteal muscles. I treated the horse as for azoturia and he made a complete recovery, which I think that he might possibly have done without treatment as long as he had been left quiet.

I would like to hear from any who have had had similar cases.

Vermilion, Alberta, Canada. W. J. MOON.

ANAPHYLACTIC SHOCK IN CATTLE

I note query No. 312 by P. W. F. answered by Dr. J. V. Lacroix in the July number of the AMERICAN JOURNAL OF VETERINARY MEDICINE. There is little doubt in my mind but that the condition described is anaphylactic shock due to the rupture of hypoderma larvae. Quite recently I have heard of a similiar case due to such a cause. The condition is fairly well described in an article by Hadwen and myself in the April number of the A. V. M. A. journal.

Agassiz, B. C. E. A. BRUCE.

MALLEINIZATION, OISE DISTRICT, FRANCE. French-Official.

Glanders, which has been brought under almost complete control and all but eradicated from the horses of our farms and cities by veterinary police measures of the past decade, is still a dreaded plague of the military horse. Formerly it was the greatest source of loss to army horses and not infrequently was communicated to considerable numbers of soldiers. So much is it dreaded by army veterinarians that it is reported that horses have at times been condemned for glanders and destroyed when a curable malady was affecting them. This was true notably in the Boer war, where numbers of horses, now believed to have been suffering from a malignant form of shipping fever, were destroyed for glanders, and again only a year ago, in a shipment of horses from Chicago to Switzerland that arrived showing aggravated symptoms and lesions of vesicular stomatitis, then present in the remount camps of this country, sixty were destroyed as glandered.

RHEUMATISM FOLLOWING INFLUENZA IN A MARE

I have under treatment a draft type of mare which has presented a series of interesting clinical phenomena for some time. The case was originally one of influenza, and during the early stages of the attack the patient did not receive much treatment. Considerable emaciation resulted, and altogether the mare was in a rather bad condition.

When called to treat the case, I gave polyvalent bacterins, stimulants and a course of Fowler's solution. Improvement was noted soon thereafter, but in the course of a few weeks, the mare began to manifest symptoms of rheumatism. The owner, who had made all preparations to make his home in another state, left the mare in my charge, instructed me to sell her when she got in condition, and to remit to him after having deducted a sufficient amount to cover all expenses for care. The owner's departure was in the early part of October, 1916, and I have kept the mare throughout the winter, spring and summer.

I have heard of rheumatism being successfully treated in the dog by giving bacterins, and I do not doubt their efficacy in some cases of rheumatism in the horse. In this instance, bacterins were given a fair trial early, and they seemed to help conditions wonderfully for a while, but relapses would occur; consequently, late in the spring I began administering 30- to 45-grain doses of sodium cacodylate hypodermically every three or four days. A marked improvement followed this treatment from the beginning. All told about fifteen doses have been given, and aside from some chronic enlargements of the joints, the mare is practically well—no lameness is

manifested when she walks and but very little at a trot. The general condition has improved materially, and the mare is in a fairly good state of flesh.

My diagnosis of rheumatism was based upon the following symptoms. At first a lameness was noticed in the right hind quarter, and this coming without the usual provocation, I could ascribe to nothing but rheumatism. At the time I administered sodium salicylate along with the bacterins, and complete recovery promptly followed and remained for about three weeks. At the end of this time, however, lameness manifested itself in the left hind quarter, and this remained for a few days, whereupon it suddenly changed to the right fore quarter, and thereafter the lameness shifted until it ceased to completely disappear, while enlargement of the joints became noticeable and a general stiffness resulted. About this time there was manifested a peculiar laminitis. The laminitis I consider peculiar because the mare was not subjected to the conditions which ordinarily provoke this affection. If one is justified in speaking of rheumatic laminitis, this certainly was a case of that kind. The hoofs have now taken on the corrugations which are to be seen following laminitis as we usually see it.

In conclusion, I wish to say that sodium cacodylate seems to have done something in this case that nothing else that I tried could accomplish.

G. F. JUNGERMAN, D. V. S.

Hiawatha, Kan.

HEMORRHAGIC SEPTICEMIA IN SHEEP

This disease is very incompletely described in text-books. The only thing mentioned worth while in books that has done me much good is that the disease assumes a chronic nature, especially in older sheep. This, in my experience, is quite true. However, my experience with the disease in sheep has not been very extensive. Even late books on practice refer to hemorrhagic septicemia in sheep as being quite similar to the same disease in cattle. My observations prove that the symptoms are very slightly if at all similar and the post-mortem lesions, while resembling those in cattle, are not nearly so marked. The findings are much masked and surprising as compared to the symptoms. By this I mean that one would expect to find much more involvement of the organs than occurs.

In older sheep the disease is manifested by a cough which lasts over six months before they finally succumb. One thinks of lung worms when one first hears the cough. The sheep finally get weak so that they cannot stand and then may lie around from three to ten days before they die. They usually have one or several degrees of fever all the time. On post-mortem we would expect to find extensive lung involvements of some sort, but instead a small tip of the lung is hepatized and the heart shows scattered petechial hemorrhage along the course of the coronary arteries. Examination of the abdominal organs may show some hepatitis and usually nephritis. The kidneys are ecchymotic. The bowels, stomach and spleen usually show no hemorrhage of any kind, but the spleen in a very few cases may show hemorrhage.

In young lambs the disease shows up with lameness and a sort of paralysis of the limbs. This usually begins in the forelimbs and extends to the hind limbs until the animals become completely paralyzed. This apparent paralysis is possibly due to disturbance of the circulation. When the condition settles only in one limb, spontaneous recovery frequently occurs. The animal pants and shows a high temperature and in some there is inability to swallow. Post-mortem examination in these cases reveals some petechiae of the heart and nephritis with ecchymosis but few other lesions of note.

Sheep must be quite resistant to hemorrhagic septicemia as I have never noticed a case on the same farm where the disease was prevalent among cattle. Spontaneous recoveries are much more common in sheep than in cattle, and while in young lambs a case once in a while remains permanently crippled, as a rule they recover.

Mt. Sterling, Iowa. C. F. NEIS, D. V. M.

URTICARIA ABINGESTIS IN CATTLE

In the July issue of VETERINARY MEDICINE, query No. 312 by P. W. F. and the clinical report by Dr. E. L. Young apparently deal with the same condition. It is a form of urticaria abingestis and affects cattle in good or fair condition in the spring and early summer most commonly.

The symptoms appear very suddenly and are such as to cause alarm to the uninitiated owner. A typical case presents the following picture: Swelling of the vulva, anus and sometimes base of the tail. Occasionally a little tympany or at least fullness in the upper left flank, but this is not at all constant. Swelling of the eyelids, nostrils and often the commissures of the mouth. There is a profuse flow of tears and dribbling of saliva. The skin from the intermaxillary space to the sternum along the inferior cervical region is very much thickened, especially towards the dewlap where it assumes the consistency of thick leather. There is a little hyperemia of the mucous membrane of the air passages.

FIXING RESPONSIBILITY, OISE DISTRICT, FRANCE. French-Official.

The veterinarian, if such there be, who imagines that in passing a horse for sound at the time of purchase failing in the smallest degree to provide for its health at remount stations, who is lacking in diligence for the protection of his charges on horse transports, or who does not measure up to his best in the handling of horses in active service at the front, that his sins will not find him out, is a much mistaken doctor. Horses are marked, branded, from the time they enter military service until they leave it. By these brands it is possible for the authorities to trace the history of any horse, to learn by whom he was purchased, what was paid for him, who passed him as sound and under whose care and in whose service he had been throughout his subsequent life in the army. In civil life the owner has been known to get rid of a diseased horse and thereby save himself from loss, but such methods would not avail in the army. The transfer of a horse from one department to another is one of the quickest ways of calling attention to his defects.

This gives rise to symptoms of slight dyspnea. The pulse, temperature and respirations are rarely disturbed.

I first encountered this peculiar complaint some years ago when I was an assistant in Ireland where I saw several cases. It is common here in Wales in certain districts, and I or my assistant have seen probably a dozen this year.

This history not infrequently shows that symptoms have appeared soon after the animal has come in from water or soon after being turned out to the pasture where it would probably drink a good quota before commencing to graze. The water supply often consists of stagnant pools swarming with animal life from the tadpole down and the surface being covered with scum of vegetable growth. A great number of these little creatures no doubt find their way to the stomach in the drinking water, and I have no doubt the condition is associated with "musselling" in the human being. I do not know whether the latter condition occurs in the States, but I once saw an Irish woman thus affected just after a hearty meal of mussels. I can, of

course, only vouch for her face, but it presented all the symptoms which I note in cattle.

I think Dr. Lacroix struck the right note when he suggested auto-intoxication as accountable for the symptoms. The condition is a benign and transient one, and all cases recover quickly in my experience. I have never known more than one case on the same farm so that a client who calls us in has usually not seen one before and is naturally alarmed. I have had more fun over these cases than over any other.

My treatment (tell it not in Goth!) varies with the psychology and pocket of the client. If a poor man rushes in and tells his distressful tale in gasps and won't sacrifice his simple faith in "something in a bottle," I give him a draught which costs me less than the bottle and make no charge. If another comes and is a decent fellow who I know will listen to reason, I advise him (especially if I am busy) to go home and exercise patience, assuring him that the animal will be well again before next morning. If a third call comes from one who possesses more wealth than human nature, I make a visit with all speed, administer a potion and give a dramatically favorable prognosis. This enhances one's reputation and helps to swell the ledger.

L. W. Wynn Lloyd, M. R. C. V. S.
Carnarvon, North Wales.

MINERAL OIL FOR HORSES AND CATTLE

I have read with interest the report in the September issue of the Journal on the death of horses following drenching with oil by Dr. D. L. Fry, of Custer, Mich. I have been using mineral oil in the treatment of intestinal disturbances for the past two years with excellent results.

I administer to cattle as a drench the following mixture:

Common medium cylinder oil	24 ounces
Turpentine	2 ounces
Aromatic spirits of ammonia	2 ounces
Guiacamphol	1 ounce

I also give this in the treatment of intestinal disorders of the horse where the quick acting cathartics may not be indicated. Where it is given in one or two ounce doses every fifteen minutes for three or four doses and later every hour, I find that it gives good results. Of course, additional treatment is indicated in most cases.

I find this preparation safe to leave with the owner or caretaker and have had no bad results in following this practice, excepting in one instance where a client disregarded instructions to give ounce doses and in his attempt to drench the animal, mechanical pneumonia was occasioned.

While I do not wish Dr. Fry to get the idea that I consider vegetable or mineral oils specifics in intestinal troubles, I do think, however, that we do less harm in giving the better grade of cylinder oil combined with good intestinal antiseptics than we might do with some of the "sure cures" that cost much more.

St. Joseph, Mich. C. E. Goodrich, D. V. M.

THE TREATMENT OF CANINE DISTEMPER

Since writing the article that appeared in the October issue of Veterinary Medicine, I have found that the action of Inula and echinacea is enhanced by the following treatment:

Simultaneously with the intramuscular injection of Inula and echinacea I am giving a subcutaneous injection of the following:

℞

Iron citrate	gr. ¼
Sodium arsenate	gr. 1/64
Nuclein solution	M. X

M.

Sig. Give at one dose and repeat every twenty-four hours.

New York, N. Y. G. W. Little, D. V. M.

LAMINITIS SEEMINGLY A RESULT OF EXHAUSTIVE DIARRHEA IN THE HORSE

The patient was found standing by himself in one corner of the lot with the head down and breathing rapidly. Unless forced to do so, he would not move. The owner said the animal had not been fed nor had access to anything out of the ordinary, but was turned in the lot at night and found in this condition the following morning.

The symptoms displayed were inappetence watery evacuation of the bowels, temperature slightly elevated (103 degrees F.), pulse weak and rapid (75—100), mucous membranes congested, rapid breathing, very stiff, would move only if forced, very warm at coronary band, urine slightly colored dark.

I gave a quart of oil followed with sulphocarbolates. The sulphocarbolates were given every two hours for six hours, three tablets at a dose, without any apparent results. Morphin was given in five grain doses hypodermically. The feet were kept in bran packs, soaked in cold water every hour or so. Failing to get satisfactory results from this treatment, I began giving the following every two hours:

Tr. opium	℥i
Bismuth subnitrate	℥iv
Oil of peppermint	℥i

The patient grew worse every hour and finally died about the fifth day.

I have had two cases of this kind where I

used practically the same treatment and the results were the same. I should like to hear from some practitioner who has had experience with this kind of cases and especially if he has had good results from any particular line of treatment.

Mahomet, Ill. S. E. Sisk, D. V. M.

FATAL VAGINAL HERNIA IN A COLT

A few days ago I was called to see a yearling draft filly. Upon my arrival I was informed by the owner, a man of eighty years, that the colt was in good health, only there was "something white protruding from her waterworks about two inches."

He had not been to the stable for about three hours, and upon our arrival there we found the colt dead, with practically all of the bowels out on the floor behind her. It looked as though everything was out that possibly could get out. The larger part of the mass had passed through the vagina while a smaller portion through the anus.

An autopsy was not permitted. I am at a loss as to the cause.

Quaker City, Ohio. Marvin E. Hartley.

THE HUMANE DESTRUCTION OF HORSES

From the August issue of the journal it seems that some have experienced difficulties in destroying worthless equine patients. It no doubt is embarrassing to attempt to destroy an animal by some method and almost make a failure. It not only provokes the man who attempts the killing but does not meet with favor on the part of the witnesses, some of whom may become the veterinarian's clients.

The most favorable impressions are usually made when results come up to expectations from the methods employed. However, this is impossible in every instance on account of varying conditions.

A well directed bullet is usually effective; however, the load of a shot-gun, the muzzle of which is about one to two feet from the animal's head, is much more effective and far more accurate. Shooting is not attended without danger for if a miss is made the lives of people in range distance are in danger. The noise is of little or no consequence in the rural district, but may cause considerable anxiety on the part of some people in urban districts.

A good method, and far superior to either one of the above methods, is to introduce the arm, with curved bistoury or hook bladed castrating or spaying knife in hand, in the rectum and carefully puncture the wall of the rectum making a four to six inch longitudinal incision in the aorta. Make sure the incision is well made by feeling the blood as it escapes into the peritoneal cavity. The hand should be removed quickly, but avoid having any blood escape from the anus, and remove what little blood happens to be on the hand. The animal will fall and after a few kicks die from hemorrhage.

The smaller the opening is in the rectal wall the fewer the chances are for external loss of blood. It is well to add a few words of explanation that an animal rarely dies without struggling some. This will in a measure tend to abate any feelings on the part of the client that a cruel method was employed. Poisons are less rapid and not so sure and more expensive. Other methods are hardly more humane. Drowning is probably as humane, according to the statements of some people who have been revived after having nearly drowned. Drowning is not practical with the larger animals and does not meet with the approval of the laity and is not to be recommended by the profession.

Auburn, Ala. W. W. Webb.

TETANUS IN A MARE

A six year old mare that was not working was kept in a barn where mud and manure were knee deep. The animal showed signs of being sick for one week before I was

called; the owner, expecting her to be well without any veterinary help, neglected her.

Upon my arrival it was not difficult to make a diagnosis, as the case was very typical. I looked for wounds that might be the source of infection, but in vain. Nevertheless, I did find that in the left hind foot the insensitive frog had completely separated from the underlying sensitive frog and it remained attached like a hinge, opening and closing as the animal walked. I examined these parts and found a greenish-yellow, oily secretion exuding, which had a very offensive odor. Deciding that this was the site of entry of the infection, I proceeded to cleanse and disinfect the parts. This animal showed no lameness of the affected foot.

After I described the necessary treatment and the time that might be involved in attempting to cure the mare, the owner decided to let her run in the field and let nature take its course. The mare fell to the ground two days later and died.

Merced, Cal. Daniel Mattrocce, D. V. M.

FIBROSIS OF THE PROSTATE GLAND AND WILSON'S MUSCLE IN THE BULL

SUBJECT: Pure-bred Shorthorn bull eighteen months old weighing about 1,200 pounds. History given by owner at time of examination, June 18, 1917: Bull was purchased for breeding purpose in November, 1916, and when put to service he was found to be of a satyric nature. Was quick and willing to serve, but during and after service he was noticed to strain a great deal which caused prolapse of the rectum. At times this condition would last for an hour or two, and other times for that many days. As there was no veterinarian in the immediate vicinity the owner consulted the service department of *The Dakota Farmer* (a good farm paper), which is conducted by Dr. Van Es of the Agricultural College of North Dakota.

The above mentioned service department gave a prescription using tannic acid and glycerine as the active agents. Instructions were to use the prescribed remedy as an enema daily for one month, and in case this failed to give relief that a veterinary surgeon should be called, and that amputation of the rectum would be necessary.

Knowing the breeder as I do, after doing his work for two seasons, I can vouch for him adhering to any reasonable rules laid out to him. He continued the treatment throughout the month with fruitless results and then called in the surgeon to amputate the rectum. After listening to the history and making only a visual observation from some distance the veterinarian condemned the previous treatment and prescribed one of his own to be used in like manner for another month, which was carried out without good results.

By this time I had returned from school and my services were sought. As I am now located some distance from the place and Dr. C. T. Swisher having my former office, and the case being in his territory, I thought it my profesional duty to call Dr. Swisher and have him present. Dr. S. S. Gibson was a guest of Dr. Swisher that day, and we three were present. I arrived some time before the other doctors, and spent my time observing the animal for symptoms, and general attitude. After Drs. Swisher and Gibson arrived we began the examination.

DIAGNOSIS: While watching the bull he attempted micturation, which was accompanied by severe pain, evidenced by groaning and straining. Urine was voided in only a small amount and the flow was in a stream about the size of a ten-penny nail. This gave me a clue, so I looked for the trouble in the urinary tract. I made a rectal examination and found the prostrate gland and Wilson's muscle greatly enlarged and fibrous. After Swisher and Gibson confirmed my diagnosis we consulted as to treatment. Then the owner told us that the bull had proven unfertile in all his services during the winter.

CONCLUSION: We decided that an operation to correct the condition would not only be a difficult one, but a serious one, and even if it were a success in relieving distress in urination and the prolapsed rectum that his chances were few to become a breeding animal. All registered stock is sold on a guarantee that with ordinary care they will render satisfactory service, so the owner had me accompany him to the breeder from whom he bought the bull, and the breeder at once agreed to have the bull sold for slaughter and compensate for the difference in the price received and all incidental expense. The previous owner then told me that the bull had been affected with satyriasis for some months before he sold him, but he had not noticed the prolapse of the rectum.

Mitchell, S. Dak. G. G. FABER, D. V. M.

ASCARIS MEGALOCEPHALA IN YOUNG COLTS

During the past few years the readers of the AMERICAN JOURNAL OF VETERINARY MEDICINE have perused with interest reports on isolated cases of various entozoal parasites in different animals. The writer feels that he does not stand alone on the opinion that if autopsy was practiced more on fatal cases, there would be more practitioners furnishing similar reports to the JOURNAL. The mere report of such cases is desirable. However, these reports are far more interesting and enlightening if they are accompanied by the history of the case, the clinical picture of the symptoms present, the death scenes if they were witnessed and the post mortem findings.

There have come to the writer's attention during the last three consecutive years fatal cases of intestinal parasitism in colts. Each case has been reported separately, and they are now reported collectively. They are similar in that the patients were colts in prime physical condition, under one year old, and the same species of worms was present. The cases are different, however, when it comes to the time of year in which they occurred; vastly different are the symptomatic pictures with the closing scenes of death; and greater are the dissimilarities of the pathologic conditions found on post-mortem.

On February 4, 1915, about eight o'clock in the evening, a call was made to see a sick colt. The patient was a plump, smooth, robust, bay stud colt that would be a year old in the spring. This colt a few hours before would have passed physical examination as being in perfect health. Now he was in the midst of an attack of what seemed to be

spasmodic colic. The pains were repeating with increased severity; their recurrence was with greater rapidity and lengthening in duration until continuous rising and falling with a great deal of force were constant. The whole surface of the colt's body was saturated and steaming with his own perspiration. His breathing was forceful and gradually becoming shorter and more rapid. The pulse was reasonably strong, but repeated attempts failed to catch the rate. Peristalsis was irregular with the intervals of arrested action lengthening in duration. As midnight appeared and wearily passed by, this picture took on a more serious hue. The colt arose only occasionally in his awkward and laborious efforts to stand. As he walked about the stall in his delirium, the limbs were carried forward like clubs of wood. The gait was spraddling and uncertain. In the act of lying down there was evidence of great pain. Rolling now was minus the violent physical exertion. Perspiration had ceased, leaving the surface of the body dry, cold and shivering. General physical weakness and exhaustion were ushered in with that haggard and anxious expression in the eyes. At this time rectal examination revealed a large portion of the small intestine crowded back in the pelvic cavity. The scenes from now until five o'clock in the morning, when death relieved all suffering, varied only in intensity and violence.

An autopsy was held at noon, disclosing torsion of the small intestines with the ligated portion presenting a deep dark, purplish, greenish black color. There was no content in the small intestines other than multitudes of round worms (Ascaris megalocephala). About five quarts were removed. These worms were the largest and longest obtained from any subject posted by the writer.

On October 12, 1916, about 9:30 in the morning, the writer was called to see a sick male colt that had been weaned three days before. The colt was found sick in the box stall when the farmer went to the barn to do the morning chores. The owner had said over the telephone, "The colt was up; seemed to be fairly strong; not bloated nor restless and apparently had not wrestled around much through the night." On my arrival in the barn an hour later, the colt was found down, stretched out and lying quietly on the unmolested bed of straw. He was a colt that would pass physical inspection and now was "all in." There he lay stretched out, apparently at ease, with temperature below normal and with the ears, nostrils, lips and all extremities cold. The visible mucous membranes were pale; pulse imperceptible; heart action rapid and weak. The breathing was very shallow and easy as if under chloroform anesthesia. This general physical weakness grew more pronounced until death, and the animal slipped silently away about noon.

Autopsy was made after dinner. We found a rupture of the small intestines with feces and multitudes of the worms (Ascaris megalocephala) in the abdominal cavity. Ad jacent to the rupture on both sides, a distance of a foot or two, there were weakened areas of the intestinal wall. Apparently a peck of these worms was obtained from this subject.

About nine o'clock on the morning of July 17, 1917, a call was made to see a suckling mare colt that was found sick when the owner went out to the barn after breakfast to harness a team that included this colt's mother. On examination of the mother, we found that the colt had not nursed since midnight. The colt assumed the position and had all visible symptoms of croupous pneumonia. The ears drooped and hung away from the head. There was a haggard expression in the eyes. Intense thirst was manifested by the desire to drink large quantities of water often.

The visible mucous membranes were pale, bordering on white, except those of the eyes which were fiery red. The pulse was imperceptible; heart action greatly accelerated and very weak. Under the forearm, between the hind legs, about the udder and under the tail, an intense perspiration was present. The temperature was 104° F. and all extremities cold. No peristaltic action was audible; breathing was decidedly laborious and rapid. Rectal douching caused the expulsion of a great amount of gas and large quantities of mucus. My diagnosis was verminous colic with complications. Death was ushered in during the noon hour without a struggle. A faint pitiful moaning was present before death. The colt died lying on its abdomen and sternum with the pelvic limbs lying forward on each side of the body, while the thoracic limbs were stretched forward with the head lying between them, the poll under the left leg above the knee and the nose under the right leg below the knee.

Autopsy was made at two o'clock in the afternoon. We found impaction of the cecum with the contents not dried nor compressed. There was mesenteric torsion of the ileum. Extensive enteritis existed throughout the entire intestinal tract. The stomach was greatly distended with the large amount of water drunk before death. The liver and kidneys showed signs of chronic inflammation. The spleen was enlarged and darker than normal. A large amount of mucus was present in the abdominal cavity with inflammation extending to both layers of the peritoneum. The lungs were congested from the pressure of

the engorged stomach. The heart and aorta contained an ante-mortem clot. A great number of round worms were obtained from the large colon and cecum. They were very numerous, although the smallest worms I have ever found in any subject infested with the Ascaris megalocephala.

Tama, Iowa. FRED M. MAXFIELD.

PURULENT OTITIS IN THE HORSE

I was called to a place a few miles from town one day last March to see a horse which the owner stated was not just right. I found a dark bay gelding of about 1,100 pounds in weight, standing in his stall with his head down and eyes nearly closed. He would not eat anything but would take a few swallows of water now and then. Upon closer examination I found that one ear was just a little lower than the other and that the eye on that side was closed a little more than the other. I examined the ear and all around that side of the head, but could not find any sore place. I decided that I would have to wait for a few hours for more developments before venturing a diagnosis.

I visited the case again the next day and found very little change except that the ear was a little lower and the eye was closed a little more. The owner now informed me that the horse would at times experience some very excitable spells, trying to climb into the manger or up the wall and then settling down so that the owner would not be able to get him to notice anything. I came to the conclusion that there was either a clot or an abscess on the brain and I ordered compresses applied to the head and kept up the treatment I had been using. That was mostly nitrate of potash and iodid of potassium given in the drinking water which the horse would take at times.

The third morning I was called early, as the owner said that the horse was down and nearly dead and that he wished me to put him out of his misery. I found the horse down and the only sign of life was that you could see his sides raise when he breathed. Upon raising his head it would drop again as if he were dead. I advised the owner to let the animal alone and watch for a change, although I gave very little hope for recovery. The horse remained in this condition for three days, he was rolled over twice every day and the use of the compresses were continued. The fourth morning after the horse went down the owner went out and was much surprised to find him up and trying to get to some oats that were in one corner of the box.

Upon arriving at the place I found that there was a discharge of pus from the affected ear and that it was very tender. The ear was now washed out with warm water and, with the few bruises healed up, the horse is as good today as ever.

Vermilion, Alberta, Canada. W. J. MOON.

SPAYING OF BOVINES IN ARGENTINA

S. Collas and R. Saint-Calbre, describe this work in the *Rec. Med. Vet.* The animals presented for castration are usually bred directly from the Shorthorn or Hereford bull and the native cow. They are three to six years old, as a rule, and in rather poor condition. A few heifers are spayed through the flank. They have all retained their full liberty from birth, and are therefore unapproachable without proper means of restraint. Corralled in groups of forty to sixty, they are driven one at a time into a kind of stocks, in which the head is seized and immobilized by an ingenious contrivance. The limbs are free, but little lateral movement is possible. Five assistants enable an expert operator to work with extraordinary rapidity. One assistant takes up a position above the animal and keeps the tail elevated during the operation. Cows are spayed *per vaginam* by means of an ordinary chassaignac ecraseur, provided with spare chains, and an ovariotomy knife. These instruments, together with some sponges, are well boiled in a three per cent solution of lysol before the day's work begins, the hands and arms are thoroughly disinfected, and both hands and instruments are rinsed in an antiseptic solution after each operation. Two pails, one containing water, the other a weak solution of lysol, are used to wash the vulva and surrounding parts. The washing is, however, carried out in a very perfunctory manner, occupying only ten to twelve seconds, whilst the contents of the pails, changed every ten to fifteen cows, become very dirty.

Technic.—The operator, suitably booted and clothed, with his right hand removes the vaginal mucus, and punctures the anterior vaginal wall two fingers' breadth above the os The left hand is then introduced, the fore and middle fingers of which enlarge the incision and seize the ovary, usually the right, drawing it into the vagina. With the right hand the operator now grasps the eraseur, passes the chain above the ovary, slackening the chain whilst pushing against the handle with his chest. The ovary is then cut off very quickly; average time four to six seconds. Without removing the left hand, the left ovary is similarly dealt with. The hand containing the two ovaries is withdrawn, and, without any washing, the animal is immediately set at liberty and commences to graze. The cow seldom moves during the operation, and any arching of the back is at once checked by a slight blow on the nose. The average

time between the introduction of the hand into the vagina and its withdrawal with the two ovaries is rather less than 1½ minutes. As a rule, twenty to twenty-two castrations are performed per hour. In one day (eight to ten hours), the operator castrated 175 cows and eleven heifers.

Only two accidents are recorded, both cases of double radial paralysis from injuries inflicted in the "stocks." One cow recovered within an hour, the other was slaughtered after twenty-four hours. At the autopsy, a small lacerated wound was found in the uterus and a large bloodclot in the pelvis. One death occurred, attributed to the animal's very poor condition at the time of operation. The large number of spayed cows appeared to suffer no ill effects; on the contrary, their general condition rapidly improved, whilst the mortality was practically nil. These satisfactory results are ascribed, apart from the remarkable dexterity of the operator, to the simplicity of the means of control, the rapidity of the operation, and the open-air life in the favorable climate of Buenos Aires.—*Veterinary Review, Edinburgh.*

THE DESTRUCTION OF ANGIOMAS AND OTHER NEW GROWTHS BY THE INJECTION OF QUININ AND UREA HYDROCHLORID

Babcock (*New York Medical Journal*, March 3, 1917) impressed by the intense necrosis produced by the injection of quinin urea hydrochlorid in the vascular tissue, used this solution in the treatment of angiomas. A strong solution into the skin produces an instant intense burning, quickly followed by analgesia. The area injected becomes white, anemic, and necrotic, and a few days later a shrunken, adherent black eschar marks the point of injection. The surrounding edema disappears in a few days, the eschar separating slowly, with little evidence of inflammation or pain. If a considerable area has been injected, there is left a deep ulcer which heals slowly, but usually with little pain or inflammatory reaction. If the injection is made deeply into the tissues an area of necrosis occurs which gradually becomes replaced by fibroconnective tissue. Objections to the use of this necrotizing agent are, the primary transient but intense pain; the marked secondary anemia; the sluggishness of the residual ulcer; the transient induration of the eschar; and the possibility of serious symptoms from quinin idiosyncrasy.

The advantages of the method are the intensity of the necrosis produced, the persistent anesthesia, the low toxicity, and the convenience of application.

In a cavernous angioma of the inside of the cheek the injection was followed by the escape of a few drops of blood from the needle puncture, after which there was rapid necrosis, the slough separating without any evidence of hemorrhage and with complete removal of the tumor. A painless edema involving the entire half of the face had largely subsided at the end of a week. Cavernous angiomas of the face in infants are often difficult to treat, as they tend to recur and grow after the use of various destructive agents. In one such tumor of the forehead of an infant that had recurred after the use of electric desiccation, fulguration, the application of carbon dioxid snow, and other measures, the injection was followed by the formation of a black eschar and an apparent cure.

Internal hemorrhoids injected with a twelve to fifty per cent solution of quinin and urea hydrochlorid promptly become necrotic and drop off after a number of days. The associated marked edema, especially from the stronger solutions, is a distressing complication, the rectal mucosa projecting through the anus suggesting to the patient that his condition has been markedly exaggerated. Unfortunately in this region the secondary analgesia may not be entirely efficient, and usually the sphincters should be well dilated before the injection; otherwise the patient may at times suffer more from this treatment than from the conventional clamp and cautery operation. For large urethral caruncles the method seems of value. In port-wine stains or birthmarks, or superficial angiomas, an injection in the upper layers of the derma of a weaker solution of quinin and urea hydrochlorid enables one to substitute a white scar for the objectionable coloration of the vascular growth. The injection also seems to be very effective in the removal of warts and moles, a few drops of a thirty-three to fifty per cent solution injected under the base of such a growth being followed by a rapid desiccation of the wart, which after a time drops off, leaving a reddened and transiently thickened scar. In a verruca of the hand which had recurred repeatedly after the application of trichloracetic acid, acid nitrate of mercury, and a solution of ethylate of sodium, this injection not only promptly destroyed the growth, but left a scar that was practically inconspicuous at the end of two months. In the removal of these small growths no dressing is required, and the black eschar, if upon the hand, is not painful, and usually does not interfere with the vocation. Keratoses and superficial and deep epitheliomas of the skin or mucous membrane apparently may be likewise destroyed by the injection.

An ordinary syringe is employed, and for

convenience a thirty-three per cent solution of quinin and urea hydrochlorid is prepared in ampoules containing 2 cc. each. With a fine needle the affected area is infiltrated, taking care not to infiltrate too widely. The chief action of the injection is to block the circulation and cause ischemia; therefore the entire area is infiltrated, or a proximal infiltration is so given as to cut off the blood supply. In treating sensitive areas the preliminary injection of a one-half of one per cent novocain solution may be desirable to prevent the initial pain.—*The Therapeutic Gazette.*

ANTIDOTAL TREATMENT IN CHLOROFORM POISONING

At the first indication of danger the chloroform should be stopped and the inhaler removed; all obstructions to free respiration must be removed. The tongue should be pulled forward in the mouth, and mucus and saliva mopped out. Remove hobbles and admit plenty of fresh air, or even oxygen if at hand. Then administer as quickly as possible a full medicinal dose of hydrocyanic acid, of 2 per cent solution for horses 1 dr. and for dogs and cats 2 to 5 minims. It may be dropped on to the dorsum of the tongue or injected hypodermically. It acts as a powerful and rapid, though transient, stimulant to the respiratory centers, and in the writer's experience is far the best agent

Artificial respiration should also be resorted to by rhythmically contracting and expanding the chest, by jerking pressure on the chest wall and by alternately extending and flexing fore limbs. Peripheral irritation may also be good, such as a cold douche or flicking with a wet towel or a whip.

The cautious insufflation of strong ammonia is good as cardiac and respiratory stimulant. Amyl nitrite may be useful by dilating superficial vessels and so relieving the heart. It may be either insufflated, or dropped on to the tongue or injected subcutaneously in doses of 10 to 20 minims for the horse, and 1 to 2 minims for the dog. Hypodermic injections of ether, liquor strychninæ, adrenalin may all assist.

In favorable cases respiration starts with gasps in from one minute upwards, and hope should not be abandoned until the artificial respiration has been continued at least fifteen to twenty minutes, or so long as the heart beats, be it ever so feebly. If, however, the heart's action completely stops the case is usually hopeless.—*From an article on Anaesthesia by G. H. Wooldridge, F. R. C. V. S., Report of the Tenth International Veterinary Congress, London.*

IMPORTANT PRINCIPLES IN THE DRAINAGE AND TREATMENT OF WOUNDS

W. Pearson. *Lancet, London.*

After experience of the treatment of several thousand cases of wounds, Major Pearson is convinced that the value of saline solutions and antiseptics as aids to disinfection is doubtful and negligible. Their use in no way diminishes the necessity for free mechanical drainage. Vaccines are not helpful in dealing with infections in wounds of war.

Efficient mechanical drainage is an essential factor in the successful treatment of infection. The cardinal principles governing drainage are: freedom of exit, gravity, capillary action. Drainage tubes should not be employed unnecessarily. They should effect the purpose for which they are used, and should not act injuriously in the wound. Dressings should not be tight, of close texture, or waterproof. They should be exposed to the air while the discharge is profuse. Continuous irrigation aids disinfection by mechanical removal of discharge. It is not usually feasible when dealing with a large number of cases. It is not necessary to obtain good results.

Free administration of fluids to the patient is an important adjunct in the treatment of sepsis. Rest is an important factor in wound treatment and should never be neglected.

Most of the complications and sequelae of infection are due primarily to inefficient mechanical drainage, and are therefore preventable. Delay in healing is almost invariably due to local mechanical causes.—*Veterinary Review, Edinburgh.*

PHARMACEUTICAL SPECIALTIES

Stimulating White Liniment

An efficient stimulating white liniment, simple in preparation and one that will "hold together," is the following:

℞

Cottonseed oil	2 oz.
Oleic acid	1 dr.
Oil of turpentine	2 oz.
Stronger ammonia	2 oz.

M. Thoroughly shake the first two ingredients together, add the third ingredient and again shake thoroughly, then add the last ingredient, and shake very thoroughly. This should be mixed in the order given, and if properly prepared will not separate on standing. A cheaper and whiter liniment can be prepared by using paraffin oil instead of the cottonseed oil. If this liniment is too severe in its action, aqua ammonia may be used instead of the stronger preparation.

Lubricant of Irish Moss

In attempting to arrive at an efficient lubricant which is cheap, easily prepared,

and one apparently not injurious to rubber, the following is suggested:

℞

Chondrus	1½ parts
Water	100 parts
Phenol	1 part

M. Soak the Irish moss over night in water, boil thirty minutes in a closed container using hot water to make up for loss by evaporation, strain through muslin, cool, bottle and phenolize.

Sig. This may be used as a lubricant for stomach tubes, catheters, and in cases of dystocia. A convenient way to carry this is in pint bottles.

Hand Lotion

Every veterinarian needs a good hand lotion, adequately perfumed to mask odors. The following one is suggested:

℞

Bruised quince seed	4 oz.
Water	8 pints
Glycerin	2 pints
Alcohol	2 pints
Jockey Club perfume	2 oz.

M. Triturate quince seed, boil in water thirty minutes, macerate over night, strain through two thicknesses of muslin, add glycerin, the alcohol, and then the perfume.

H. S. Eakins.

Ft. Collins, Colo.

AN IODIN PARAFFIN WOUND DRESSING

Douglas H. Stewart, writing in *American Medicine*, New York, on the technic of the use of iodin, mentions a safe preparation of iodin which is possessed of many advantages over the standard tincture and other preparations for use in the treatment of wounds. It is obtained by rubbing one grain of calomel, two grains of sodium chlorid, three grains iodin crystals, a few drops of ether and gr. 1,500 of liquid paraffin. He states that the mixture is of a fine wine color at first but turns dark green on standing. Any precipitate occurring after the preparation has been compounded may be dissolved by agitation.

The claims for it are, according to the writer:

"This liquid penetrates the layers of the gauze bandage and runs down to the wound more readily than water; it does not dry quickly; it neither macerates nor tans tissue; it has no odor; it does not turn rancid; the tissues cannot absorb it, and when applied in small amounts hourly or oftener, the bandage need not adhere to the wound. Adhesion is purely a matter of care and thoroughness—or their lack. The effects of this preparation when injected into suppurating sinuses or fistulæ are often most gratifying. In its favor may be urged the absence of the foreign body effects of bismuth and other pastes.

"Should it fail upon prolonged trial, it does not prevent the use of pastes, inasmuch as no permanent plugging is performed."

COLLOIDAL PREPARATIONS

Sir Malcolm Morris, K. C. V. O., has a report in the *British Medical Journal* on the therapeutic effects of colloidal preparations, wherein he states regarding drugs in the colloidal form:

"For more than a year I have been employing the collosal preparations of the Crookes Laboratories and have had results which leave me in no doubt as to their superiority—I must say with every desire to avoid the appearance of exaggeration, their great superiority—to the same drugs in the non-colloidal form. They are results which make it an obvious duty to suggest that trial on a large scale ought to be given to a form of medication which promises to effect a pharmacological revolution."

This authority discusses the uses of collosal silver, iodin and sulphur as used in cases where the usual preparations of the aforementioned drugs are employed and adds that they are not the only collosals with which he has had gratifying results. He concludes by stating that colloidal remedies act with singular rapidity and are free of the disadvantages inseparable from the same drugs in the ordinary state, and their extensive use would effect an enormous economy in drug consumption.

In a recent issue of the *Veterinary News*, London, in a discussion of colloidal remedies by E. Lionell Stroud, F. R. C. V. S., a comparison was made between collosal cocain and cocain hydrochlorid wherein it was shown that the collosal product was as effective as the hydrochlorid of cocain and in addition was practically devoid of toxic results.

THE TREATMENT OF AZOTURIA

I can scarcely refrain from commenting on the article in the October number of VETERINARY MEDICINE by Dr. D. C. Patterson, wherein he reflects on Steffen's oxalic acid treatment for azoturia, and tells us about the large quantity of oxalic acid contained in the beet tops and crowns in his locality. When we stop to consider the fact that oxalic acid is a rather active poison and that horses in his locality are pastured on or fed on these beet tops, is it not just possible that the majority of his cases of "azoturia" are in reality oxalic acid poisoning?

"And now for *his* treatment," he says, catheterize and give strychnin and put the horse in slings, but says nothing about at-

tempting to evacuate the bowels. What practitioner even in the "effete east" would think of treating a case of azoturia in such a manner? Or who would use strychnin during the stages of excitement and delirium which accompany this disease?

However, in passing I should like to say that to my mind there is one objectionable feature, not to the oxalic acid treatment, but to the method of administering it, and that is the fact that it necessitates so much drenching, and drenching every hour certainly annoys the patient very much; besides, all practitioners are aware of the dangers of drenching a horse while it is in the recumbent position. It is too bad that the oxalic acid treatment could not be given in some other form that would not require to be so largely diluted; but of two evils we should chose the lesser.

Ottawa, Canada. L. M.

TREATMENT OF A SEVERE WOUND WITH THE POLYVALENT SERUM OF LECLAINCHE AND VALLEE

Chouleur, *Rec. Med. Vet.*

As the result of a motor car accident a mare was severely wounded on the 8th of December, 1916. The neck was held rigid, in a manner similar to that of tetanus. On each side of the neck was a vertical wound—one at the base and a little distance from the anterior border of the scapula, the other at the junction of the middle and lower thirds. These contused wounds led into a large tunnel, directed obliquely from right to left and backwards, in the fleshy mass just above the vertebral column. By exploration shreds of tissue and a piece of wood the size of one's little finger were extracted.

A preventive injection of 10 c.c. of antitetanic serum was given in the first place. The wound was then cleaned with boilede saline solution (8 in 1,000), and copiously syringed with Leclainche and Valée serum. The use of the serum was continued night and morning until a cure was ecected.

The next day—the 9th of December—the mare was much prostrated and refused all food. The pain appeared greater; and there was some suppuration, cording of the lymphatics and edema. The temperature was 39° C. This condition continued until the 14th December, from which date there was improvement.

Apart from a fresh exploration, necessary to open up a small *cul-de-sac*, the case proceeded favorably, and the mare was returned to work after twenty-seven days of treatment, without complication and almost without suppuration.

[The polyvalent serum of Leclainche and Valée is prepared in the same general manner that are other serums. In the production of this serum effort is made to incorporate as many species of microbic flora as possible.]—*Veterinary Review, Edinburgh.*

PROTEIN THERAPY

In an article on non-specific protein treatment of inoperable cancer in the *Medical Record*, New York, Drs. S. P. Beebe and H. S. Williams mention the use of sterile protein solutions which are given subcutaneously with an ordinary hypodermic syringe. The dose in the human varies somewhat with each patient, but as a rule they recommend a dose of from 5 to 8 minims, gradually increasing to 15 to 25 minims. These injections are made at varying intervals, in some cases daily, while in others at intervals of two or three days. The writers see no advantage in intravenous injections, stating that the subcutaneous administration is not attended with severe constitutional reactions such as chills, fever, nausea, vomiting, herpes labialis, etc., that are to be observed where the solutions are administered intravenously.

These protein solutions are prepared from alfalfa meal, alfalfa seed, sweet clover seed, hemp seed, rape seed and millet seed, fifty grams of the seed being placed in a flask with a reflux condenser. One thousand c.c. of distilled water and forty c.c. of 10 per cent hydrochloric acid are added. The mixture is boiled for three hours and the coarser particles strained out through gauze. The filtrate is concentrated to 200 c.c. approximately and the excess of acid neutralized with 10 per cent solution of sodium hydroxid. The writers recommend that any excess of acid be neutralized with the addition of 10 per cent solution of sodium hydroxid. In fact, they claim it is best to add a sufficient amount of this solution to get a slight alkaline reaction to litmus. This solution forms a most excellent culture medium for a variety of organisms and, as they say, ought to find extensive use in bacteriological laboratories for this purpose; but for therapeutic use, the only safe way to preserve it is to seal it in small glass ampules which are then sterilized by the discontinuous method.

Drs. Beebe and Williams consider that the beneficial therapeutic effects which attend this form of treatment are the result of marked blood changes occasioned by the protein injections. The changes are briefly, increase in the hemoglobin and red cell count; marked improvement in the shape, size and staining qualities of the red cells; marked reduction in the total white count in those cases showing a leukocytosis; relative reduction in the percentage of polynuclear leukocytes, in some cases diminishing as low as 40 per cent to 50 per cent in a total count of 7,000 to 8,000; marked relative increase in the large monon-

uclear leukocytes, reaching not infrequently a percentage of 30 per cent to 35 per cent in a normal total count; increase in the size and improvement in the staining qualities of the large mononuclears. These changes are definite in character, are produced gradually over a period of some weeks or months and persist for a long time (in some cases noted for a period of nearly two years), and continue for months after the injections are either stopped altogether or are given at longer intervals. These blood changes are not the immediate consequence of a single injection like a marked polynuclear leukocytosis following the administration of bacterial vaccine, but are gradual changes developing during a period of weeks or months.

QUESTIONS ASKED BY THE TEXAS STATE VETERINARY EXAMINING BOARD

Anatomy

1. Name the bones of the cranium.
2. Name the bones of the hock and give the articulation of each.
3. Trace the circulation of the front limb beginning at the brachial artery.
4. Name the covering of the testicle from without to within.
5. Describe the stomach of an ox and give its relations.
6. Name the cartilages of the larynx.
7. Name the lymph glands of abdomen and pelvis.
8. Name the cranial nerves and give their functional characteristics.
9. Give the relations of the lateral cartilage of the foot.
10. Name the structures in order from without to within below the knee and the posterior aspect of the front limb.

Theory of Practice

1. Give the technic of a thermal and intradermal tuberculin test, and state what constitutes a reaction in each test.
2. Give the technic of administration of anti-hog cholera serum in single treatment. Also the technic of the use of hog cholera virus.
3. Give the differential diagnosis of anthrax.
4. Give the cause of hemorrhagic septicemia, also post mortem lesions.
5. Give the cause, symptoms, and treatment of actinomycosis.
6. Give the symptoms and differential diagnosis of flatulent colic.
7. Give the pathological anatomy of croupus pneumonia.
8. Give the treatment for acute pleurisy.
9. Give the diagnosis and post mortem lesions of glanders.
10. Give the latest treatment for black leg and anthrax.

Surgery

1. State the distinction between antiseptic and aseptic wound treatment.
2. Define (a) Septicemia, (b) pyemia, (c) phlegmon.
3. Give cause, symptoms and treatment of tendovaginitis.
4. Define lymphangitis; give cause, symptoms and treatment.
5. Describe esophagotomy.
6. Mention diseases for which phlebotomy of the jugular vein is performed.
7. Describe the operation of rumenotomy in the cow.
8. Give the symptoms and the treatment of inguinal hernia.
9. Give the etiology and the treatment of shoe boil.
10. Name the principal facial sinuses that concern the veterinarian most. What diseases or conditions of the facial sinuses give indication for surgical interference?

Obstetrics

1. What is obstetrics?
2. State how the bones of the pelvis of the mare differ from those of (a) the cow, (b) the sheep, (c) the bitch, (d) the cat.
3. (a) Give the supero-inferior and the transverse diameters of the bony pelvis of the cow. (b) Name the different articulations of the pelvis.
4. Describe the ligaments of the uterus. What are the functions of these ligaments?
5. Give the composition of cow's milk. State the difference in the composition in the milk of the mare and that of the cow.
6. What are the effects of indigestion on pregnant animals?
7. Describe the operation of artificial impregnation.
8. (a) What is the difference between abortion and premature birth? (b) Mention some of the causes of non-contagious abortion?
9. Name four of the most difficult presentations, and treatment for each.
10. (a) Give causes, symptoms and treatment of inversion of the uterus; (b) of the vagina.

Materia Medica

1. How do sedatives act, and what is the danger of the excessive use of sedatives?
2. Give the action and use of cantharides.
3. Give the action and use and source of acetanilid.

4. Name the active principle of the following: aconite, ergot, belladonna and give indication for each.
5. Give the origin, incompatiblity, physiologic and therapeutic action of digatalis.
6. What is (a) vaccine, (b) bacterin, (c) antitoxin?
7. Give the action and uses of cocain.
8. Describe saline infusion, and give three methods of introduction and three indications for its use.
9. Write a prescription for a tonic to give a horse.
10. Give symptoms of lead poisoning in an ox, and give treatment for same.

PATHOLOGY

1. What is necrosis? Name the different varieties.
2. Name the different degenerations.
3. What is hyperemia? Name the varieties and give their cause.
4. Give the pathology of fever.
5. Name the different varieties of tumors. State those that are malignant.
6. Name the different modes of extension of disease.
7. What is septicemia, sapremia and pyemia? Differentiate between each.
8. Give the pathology of endocarditis.
9. Give the pathology of parenchymatous nephritis.
10. What is immunity? How is it conveyed?

CHEMISTRY QUESTIONS

1. What is organic chemistry?
2. Define chemistry, atom, molecule and valency.
3. What is a compound?
4. What is sugar of lead? Give its pharmaceutical name.
5. Describe a method of preparing zinc sulphate.
6. Give a chemical test for silver.
7. What is hydrogen dioxid? Write the formula.
8. What two gases in the air are required by plants? Which in the larger amounts?
9. What is a salt?
10. How does iron occur in nature?

SANITARY SCIENCE AND POLICE

1. What is sanitary science police?
2. Tell in detail how to clean and disinfect a farm infected with hog cholera.
3. Tell in detail how to attend to a dairy infected with tuberculous bacilli.
4. Tell how to eradicate glanders from a large stable of horses.
5. Tell how to control an outbreak of anthrax in a county having full power to quarantine.
6. Give latest method in detail how to control contagious abortion in a herd of dairy cattle.
7. How should rabies be controlled in a country?
8. What methods should be adopted in the United States to control shipping fever?
9. How much dependence may be placed in a layman to follow instructions in cleaning and disinfecting premises?
10. Through what organized agencies would it be the best for a state to control animal diseases?

THE FEEDING OF DOGS

To the Editor of *The Veterinary News*, London, England:

Sir:—Considerable alarm has arisen with regard to the adequate feeding of dogs owing to the food restrictions, and the Council of this Society, having consulted a number of canine experts on the subject, crave your good offices in making known the following brief particulars which will be interesting and helpful to your readers.

A leading firm is now, with permission of the Government, supplying three varieties of dog food, namely, "Fibrine" cakes, puppy biscuits, and "Rodnim," which is a kind of hound meal, and these given separately, or with portions of cooked horseflesh (cost about fivepence a pound), paunch, lights, boned fish-heads, etc., and mixed with a liberal supply of liquor obtained by boiling these articles with bones, etc., make a most excellent diet. "Lactol," supplied by another firm, is also good for puppies, and other foods are also now being advertised. Bullocks' and sheep's blood (costing fourpence to sixpence a gallon which is equal to 4 lbs.), steamed for twenty minutes, forms a solid, nutritious mass, of which dogs are very fond, and it can be cut up and given alone or with broken biscuits, liquor, and other food as indicated above. In summer time, especially, the discarded leaves of greenstuffs, unwanted portions of other vegetables, should also be utilized. Food of all descriptions should be perfectly fresh, and a dog's power of digestion should be taken into account in determining the nature and quantity supplied. Over-feeding should, of course, be studiously avoided in the interests of health.

The food problem is undoubtedly a difficult one at the present time, and economy should be rigidly practiced, but it will be seen by the foregoing that owners of dogs may, at small expense, obtain sufficient nourishing food for their animals without encroaching on the necessities required for human consumption.

Chief Secretary, R.S.P.C.A.

CEMENT FLOORS PAY BACK COST IN A YEAR

By increasing the value of the manure produced, cement floors in live-stock feeding will return their cost in about one year. Tight stable floors save soluble plant food from seeping away as it does with earth floors.

Manure was increased in value by $4.48 annually for every thousand pounds live weight of steers over that recovered from animals standing on earth floors in tests conducted at the Ohio Experiment Station. In the experiments 58 steers were fed. The cost of concreting was about $4.50 a steer. Two six-month feeding periods would therefore pay for the expense of the concrete floors.

Much of the fertility value of manure is in the liquid part, which is easily carried away through earth floors. Concrete prevents this seepage, making each ton of manure worth more, and at the same time there is a greater quantity of this material.

B. A. I. MEAT INSPECTION REGULATIONS

Recent changes in the meat inspection regulations of the United States Department of Agriculture, Bureau of Animal Industry, provide that:

"A hog suspected of being affected with hog cholera or swine plague may be set apart and held, under bureau supervision, for treatment with anti-hog-cholera serum. If at the expiration of the treatment period the animal upon examination is found to be free from disease it may be released for any purpose.

"The skins from swine condemned for tuberculosis or any disease communicable to man or other animal may be removed from the establishment, except as provided in section 2 of regulation 11, for tanning or other industrial use; but they shall be removed for these uses only after they have been disinfected.

"Heads affected with actinomycosis shall be condemned, except that when a head is from a carcass passed for food or for sterilization and the lesions are slight, or calcified, or encapsulated, and are confined to lymph glands in which not more than two glands are involved, the head may be passed for sterilization after the diseased tissues have been removed and condemned.

"Heads affected with actinomycosis (lumpy jaw), including the tongue, shall be condemned, except that when the disease of the jaw is slight, strictly localized, and without suppuration, fistulous tracts, or lymph-gland involvement, the tongue, if free from disease, may be passed, or, when the disease is slight and confined to the lymph glands, the head, including the tongue, may be passed after the affected glands have been removed and condemned.

"A carcass in which lesions of caseous lymphadenitis are present and which is poorly nourished shall be condemned.

"A carcass in which infestation with Cysticercus bovis is limited to one dead and degenerated cyst may be passed for food after removal and condemnation of the cyst.

"Intestines shall not be used as ingredients of meat food products, excepting under such terms and restrictions as the chief of the bureau may specifically prescribe."

Princess Gretchen Doberman, prize German police dog, owned by Dr. J. D. Adams, Moscow, Idaho. A pup from this dog was presented to Company C, Idaho Infantry by Dr. Adams, and the dog will go to France with the soldier boys. Dr. Adams' dogs are the first and only ones of their kind to be brought into that section of the country.

VETERINARY FEES.

(*Continued from page 768*)

gravity of the case is entirely on the maternal side. The value of the colt is always to be taken into consideration. In a difficult parturition case occurring in an old, unserviceable scrub or grade mare, the veterinarian does not have the degree of responsibility to assume that he does in the case of a high-grade or pure-bred, younger dam. As a consequence of this variation in responsibility, he is not bound to go to such extremes in handling the former case as he would were the latter grade of animal concerned. His fee, therefore, should be less in the former and greater in the latter instance.

2. The gravity, or the relative difficulty of the case has the greatest bearing upon the fee charged by the veterinarian for his services. Cases of parturition

in mares that are unusually difficult should bring the maximum fee for such service, regardless of whether the case terminates favorably or not. The maximum fee in the case of grade mares and colts can be placed with reason at twenty-five dollars. The average fee in the same animals for the handling of cases of ordinary difficulty should be fifteen dollars. The minimum fee for any case of difficult parturition in the mare should be ten dollars.

3. The life or death of the colt has a bearing upon the fee charged by the veterinarian only when:

(a) The veterinarian gets the case first hand.

(b) When the dam is pure-bred and the colt, therefore, would have exceptional value.

(a) In the handling of cases of difficult parturition in mares which have come into the practitioner's hands uncontaminated by meddling or procrastination, the veterinarian must consider the death of the colt, when it occurs during the handling of the case, as detracting from the value of his services in the case. He can not in justice to his client charge the same fee that would have been his by right had he succeeded in delivering a live colt. When the case has been meddled with the veterinarian is not bound to give any consideration to this point. This point, concerning the life or death of the colt, is very important for the reason that it acts as a balm to the client's disappointment, and has the effect of retaining the veterinarian's services in future cases. If, on the other hand, the veterinarian makes no allowance for this point, it frequently happens that the only difference that the client can see between the graduate and the quack is the fee which he charges; and often he reverts to the quack. This is the *only* reason for giving consideration to the life or death of the colt in levying the fee for services. It is not that the veterinarian's services are *actually* worth less money when a dead colt is delivered. Every graduate veterinarian handles these cases with the object of making his services as valuable to the client as possible, and they are worth just as much whether the colt lives or dies, unless:

(b) The dam is pure-bred, and the colt would, therefore, have great value. The death of the colt must always be an influence on the fee charged.

4. The condition in which the case comes into the practitioner's hands has some influence upon the fee which the practitioner will charge for his services. The veterinarian should make his fee as reasonable as possible in cases that are turned over to him promptly, in order to encourage the client to persist in such promptness. Cases that are grudgingly turned over to him in a contaminated, infected condition should bring an extra high fee if they are accepted for handling by the veterinarian. This fee can with right be made the maximum fee because 1st, the client has already endeavored to make the veterinarian the loser by the meddling in the case, and, 2nd, the veterinarian in accepting such a case for handling assumes a much greater responsibility.

There is another item that should have an effect upon the fee charged for obstetrical services by the veterinarian, and that is the development of complications, such as retained secundines, laminitis and like pathological conditions. The development of complications in a case of obstetrics should have the effect of reducing the veterinarian's fee. This reduction should apply either to the handling of the parturition case itself, or else to the fee charged for the treatment of the complications. To inconsiderately pounce upon such development with a broadside of maximum fees is poor judgment in the long run. It makes easy traveling for competitors when they arrive upon the scene.

The Use of Chloroform

Just a word as to methods because it has a bearing on the fees that are earned. Never attempt to correct a malposition of the fetus while tumultuous labor is in progress without chloroforming the mare. It is a safe procedure, requires no expert assistant, is demanded by all the dictates of humanity, favorably impresses the owner, distinguishes the work of the graduate from that of the quack and, best of all, it is a marvelous aid to the operation, a time and muscle saver for the veterinarian, and a life saver of first rank for mare and colt.

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MR. BRENNER VISITS THE PACIFIC COAST IN THE INTEREST OF THE JOURNAL

Mr. I. C. Brenner, the "widely known" field man of the AMERICAN JOURNAL OF VETERINARY MEDICINE, started to the west coast by automobile immediately after the A. V. M. A.

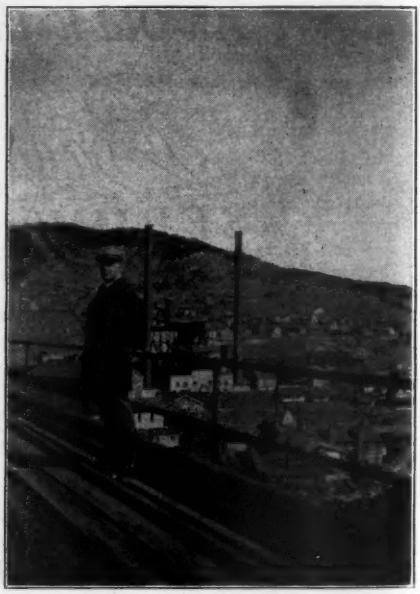
Rounding up cattle near Miles City, Mont., for shipment.

meeting in Kansas City, his route taking him through Missouri, Iowa, South Dakota, Montana, Idaho, Washington, Oregon and to California, where he is working at this time.

Mr. Brenner, of course, called on veterinarians all the way, making many detours from the direct route for this purpose. His itinerary brought him to Helena, Mont., during the time of the state meeting there. This, with his rather circuitous route across the state, enabled him to see nearly every veterinarian in the state, and as usual he was able to leave every man that he saw a subscriber to the JOURNAL.

Some of his reports of conditions in that country are very interesting. For example, he states that in traveling 600 miles from Pierre, S. D., he saw only seven veterinarians. To quote from another letter, "It is 200 miles from Belle Fourche to Miles City, but there is not a veterinarian along the line. One sees cattle and sheep galore and worlds of horses too. I did a lot of questioning among the ranchmen and learned a number of interesting things. Horses bring about $100 a head and sheep $10. I saw one group of 75 head of horses being driven to the railroad station, ninety miles distant. The horses were billed to the St. Louis market. At another place I saw cowboys driving 400 head of cattle to the railway station nearly as far, and in another instance, sheep herders driving a band of 2,000 sheep to the railroad to be shipped to Omaha."

In another letter he says, "Veterinarians are rarely called to ranches that are distant from the towns. The stock owners just let the animals lie down and die when they get sick. Veterinarians are called long distances only when contagious diseases develop. The few veterinarians I have seen say that practice is good. They all do much inspecting and testing. The ranchmen say the day of the range is past. The allotment of small tracts of land to homesteaders is the cause. The territory is all cut up and they have not the land necessary for stock raising on the large scale they used to years ago, but despite this the country seems just starting to develop. There is lots of money in circulation and farm products are high. People seem to buy everything they want and have the money to pay for it. Stock raisers are getting into the pure-bred game rapidly, and although the stock will not be as plentiful out here in the future as it has been in the past, it is going to be better stuff."



Overlooking the Homestake Mine, Lead, S. D., largest gold mine in the world. A woman owns one-half interest. Her dividend for 40 years has been $2,000 a day.

Discussing conditions in Western Idaho, he says: "The great trouble with sheep men is that they are very set in their ways, more so I believe than any other class of stockmen. They do the same thing year after year, and it is only the younger ones that try anything new. Everything here in this great sheep raising country is 'up in the air.' The sheep

A Word on Anti-Hog Cholera Serum

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men are not making nearly the money that lots of people think they are. Right here in the great hay and grain belt, alfalfa is selling for $25.00 a ton and herders' wages have nearly doubled. I noticed an item in a Montana paper that says sheep men there are selling out since hay is quoted there in places as high as $80.00 a ton."

From Spokane, Washington, Mr. Brenner went south via Pullman, where the Washington State Veterinary College is located, and on down into the Snake Valley, working northward from Walla Walla to Seattle through the heart of the apple country of Washington. He speaks of the roads as being good, bad and indifferent with the accent on the bad. He says that for miles and miles there is nothing but apple orchards on each side of the road. It was the midst of the apple picking season when he passed through, and the crop appeared to him very large. The veterinarians he found along the way, and there were many of them, speak of practice as being extra good this season. In Seattle it is the same story we hear in all cities of considerable size—the horse practice is away off.

Picking apples in the orchard of a schoolboy friend at Kennewick, Wash., 40 acres, 3,000 trees, 5-year-old orchard valued at $40,000.

Mr. Brenner left this office on March 3rd for an automobile trip that has occupied all the time since then and taken him already more than 20,000 miles. His run of this distance is probably a record in some respects, one in that he has had only two punctures and no blowouts in all that distance. The punctures both occurred on the same day and in the streets of Wichita, Kansas, but as for broken springs, that is another story. Of these there have been not a few—one occurred in Montana, 100 miles from any town. He has found the price of gasoline widely different in different localities, as low as 17 cents a gallon in Indiana and as high as 45 cents in Montana, with gradations all the way between. In Washington it was 25 cents a gallon and in Oregon 20 cents.

Worst roads encountered in 1,600 miles, between Kennewick and North Yakima, Wash. Deep sand and countless invisible "chuck holes."

Mr. Brenner has been accompanied on the entire trip by Mrs. Brenner, "who never gets tired but enjoys the trip every minute," and who has sprung not a few surprises, one of which was "pulled off" in Montana and Idaho. Mr. Brenner left her and the car at Billings, Montana, while he went to Helena to attend the state meeting. At the close of the meeting he received a telegram instructing him to meet her in Spokane, Washington. She had motored alone, a distance of 225 miles, in two days through some of the roughest, lonesomest country on the western trip, and the drive was made without an accident.

Barring unforeseen contingencies, Mr. Brenner will continue his trip south through California, failing to see perhaps fewer than half a dozen veterinarians in the whole state, and return through New Mexico, Arizona, Texas, Louisiana, Mississippi, Alabama, and to Atlanta, Georgia, where he is scheduled to be on New Year's day. His route through the South will take him to practically all of the camps where the National Guard and new National Army are stationed.

$ $ $ $ $ $ $ $

$ MONEY TALKS $

$ $ $ $ $ $ $ $

In Epidemics Talk Vaccination to Your Clients in Dollars and Cents.

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Vaccine for 50 head
Three 2 mil (cc.) doses each
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Cost for vaccine per animal 45 cents
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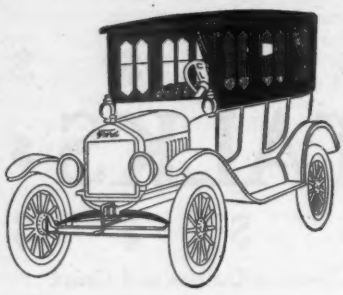

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CAUSES OF AUTOMOBILE TROUBLES

A few of the more common engine troubles with their probable causes, follow:

Irregular Action of Engine

1. Insulation on wires broken. Gas mixture too weak or too rich.
2. Cracked spark plug.
3. Battery connections defective.
4. Gasoline feed pipe partly clogged.
5. Water in gasoline or carburetor.
6. Contact in timer, or distributer, poor.
7. Spark coil vibrator improperly adjusted.
8. Damaged or loose terminals on coil.
9. Faulty ignition.
10. Leak or loose connection in manifold.

Sudden Stoppage of Engine

1. Lack of gasoline.
2. Electric wires broken or disconnected.
3. Spark coil trembler stuck.
4. Trouble at timer, or distributer.
5. Lack of lubrication.

Inability to Start Engine

1. Gas mixture too weak or too rich.
2. Battery switch open.
3. Gasoline supply shut off.
4. Water in gasoline or carburetor.
5. Cylinders dry—lack of lubrication.
6. Water in cylinders.
7. Poor compression.
8. Dirty or cracked spark plugs.
9. Intake valve stuck.
10. Faulty ignition.

Gradual Stopping of Engine with Misfiring

1. Dirt in carburetor.
2. Lack of gasoline.
3. Water in gasoline or carburetor.
4. Ignition trouble.

Regular but Weak Explosions

1. Gas mixture too weak.
2. Clogged muffler.
3. Weak valve springs.
4. Dirty valve seat.
5. Magneto improperly adjusted.

Car Running Slowly, Although Engine Is All Right

1. Brakes not entirely released.
2. Clutch slipping.

Knocking in Engine

1. Gas mixture too weak or too rich.
2. Insufficient lubrication.
3. Loose bearings.
4. Cylinder on crank case loose.
5. Loose fly wheel.
6. Spark advanced too far.
7. Motor loose in frame.

Explosions in Muffler

1. Exhaust valve stuck or not seated properly.
2. Improper ignition.
3. Cylinder missing fire and pumping explosive charges into muffler which ignite when next charge is exhausted.

Bovine Tuberculosis

By J. F. DeVine, D. V. S.

with a discussion of

The Cost of Tuberculosis
By E. Z. Russell, Editor The Twentieth Century Farmer.

The Intradermal Tuberculin Test
By D. F. Luckey, State Veterinarian, Missouri.

The State Accredited Herd
By O. E. Dyson, Former State Veterinarian, Illinois.

This is a work for which there is a real need—nothing to meet the same need has heretofore been published; it is an intensely practical discussion of tuberculosis of live stock by a veterinarian having a large experience as a practitioner and as a sanitary official. It deals with actualities comprehensively, without going into tedious detail or indulging in theorizing. It sets forth, plainly and concisely, all the essentials for coping with this vital subject in an efficient manner. Physical examination, turberculin testing, quarantine measures, disposal of reactors, methods of control, reimbursement of owners; in fact, everything pertinent to the whole broad subject is clearly presented so that the practicing veterinarian and the live stock sanitary official may rely upon this treatise in any matter pertaining to tuberculosis of cattle.

The article on the cost of tuberculosis to the live stock industry and the reasons for, and methods of its control and ultimate elimination, is a valuable addition to this work. No one is better qualified than Editor Russell to discuss the cattle producers' part in this work. Mr. Russell has made a deep study of the tuberculosis problem; he is in close touch with the live stock industry, a recognized authority on live stock matters, and an acknowledged champion of live stock interests.

The discussion of the intradermal tuberculin test by Dr. Luckey is a most welcome addition to the all too meager information available on this subject. Dr. Luckey is a pioneer user of the intradermal test and an enthusiastic advocate of it. His experience with this test extends over a period of more than six years and comprises more than 100,000 tests of which he has kept a record. No more illuminating treatise concerning any tuberculin test has ever been written.

Dr. Dyson's experience with the state accredited herd plan of handling tuberculosis in cattle, like Dr. Luckey's experience with the intradermal test, extends over a period of six years. It has received less opposition and more support from the breeders of pure-bred cattle than any other plan for tuberculosis control yet offered. Dr. Dyson is the originator of this plan and a strong advocate of it. His article gives the plan in detail with its advantages in the control of tuberculosis; a draft is given of the agreement under which it was put into operation in Illinois. A model statute for its adoption as a state policy is likewise included in the discussion.

Taken all together this volume represents the best and most practical information that is to be had on the great problem of tuberculosis as it affects our health as a nation, analyzing the subject as it directly affects the producer of meat and dairy products, the veterinarian, and the live stock industry as a whole.

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Explosions in Intake Manifold or Carburetor

1. Gas mixture too weak.
2. Intake valves not timed correctly.
3. Defective or weak intake valve.
4. Spark over-retarded.
5. Intake valves leaking.
6. Intake valve does not close properly.

Engine Making Hissing Sound

1. Broken or loose spark plug.
2. Loose or broken piston rings.
3. Loose valve cup.

Water Boiling in Radiator

1. Spark over-retarded.
2. Defective water circulation.
3. Radiator tubes or hose clogged.
4. Clogged muffler.
5. Fan not working.
6. Using low gear for too long a time.
7. Lack of lubrication.
8. Insufficient water.

Exhaust Pipe Becoming Over-heated

1. Use of low gear for too long a time.
2. Clogged muffler.
3. Spark over-retarded.
4. Radiator empty.

Squeaking

1. Lack of lubrication of friction surfaces.
2. Brakes not completely released.
3. Lack of lubrication of springs, spring shackles.

—*Standard Oil Co.*

WHY WE ARE AT WAR

Germany has forced America, as it has forced practically the entire world, to defend itself by arms. We are fighting this war because Germany made war upon us. America is a peaceful nation; we have no lust for conquest, no desire for annexation of territory; we are defending ourselves against Germany because the Imperial German Government entered upon a program which meant the destruction of all American institutions.

When we finally recognized that Germany was waging war upon us we had seen more than 225 Americans, among them many women and children, killed by German submarines; hospital ships had been sunk and unfortified towns had been bombed and bombarded. Medals had been struck in honor of the sinking of the *Lusitania*, the murderous act by which so many of our men, women, and children, lost their lives. German officials had treated the United States, a neutral nation, as an enemy. Strikes were organized in this country, plants were blown up, pro-German publications were founded and subsidized, and hatred of America was systematically sought to be inculcated among our foreign-born inhabitants. Every effort was made to involve us in trouble with Japan and Mexico. Our repeated protests were met with promises and explanations which were little better than insults.

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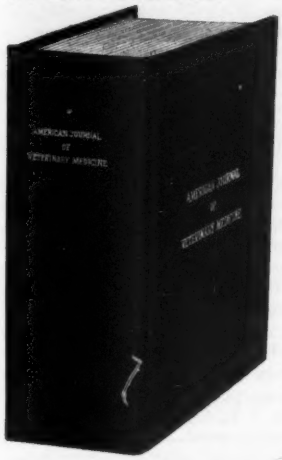

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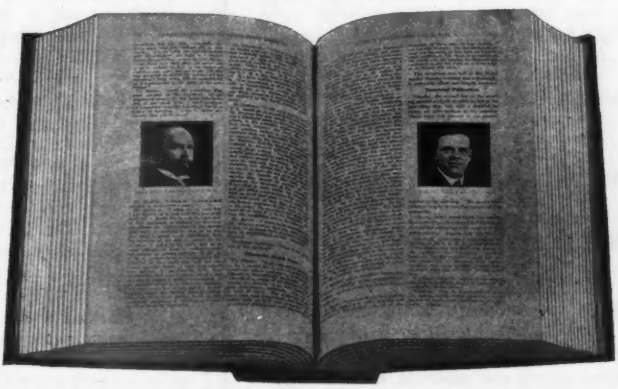

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NEW YORK CITY VETERINARY MEDICAL SOCIETY MEETING

The regular monthly meetings of this society were resumed again after skipping the warm months as has been the custom, on Wednesday, Oct. 3rd at the Berns Veterinary Hospital, 74 Adams street, Brooklyn, N. Y. The first fall meeting last year was also held at this noted veterinary landmark, which was established by Dr. George H. Berns nearly half a century ago, later taking in as associates with him two very capable young men, Drs. Risley and Gannett. Dr. Berns has seen great changes in the veterinary profession during his useful life, and it must be a great satisfaction to him to see how his services and integrity are still being appreciated by the clientele that daily makes foot prints to his office.

It is evidence of wisdom in those who guide the destinies of the association that they choose this popular spot for the first meeting in the fall, when summer heat and depressions and the allurements of vacation have sort of weaned away the practitioner from local veterinary gatherings; but 74 Adams street is like a siren—it draws them forth by creating an anticipation of its being worth while. This year the literary program was rather limited, consisting of a report of the A. V. M. A. meeting by Dr. J. F. DeVine and a short general discussion of most of the subjects considered at the national meeting, which in turn brought out the discussion of local problems.

During the meeting the question of glanders and its control in New York City was discussed at some length. Dr. Gill explained that technically all the horses in Greater New York are now subject to examination to determine whether or not they are free from glanders and urged that every veterinarian should assist the state officials, particularly in reporting all horses that have been exposed to glanders so they may immediately be examined and thus avoid further extension of the disease. Dr. Gill advocates the slaughter of non-clinical reacting cases of glanders in abattoirs so that carcasses slightly tainted may be passed for food.

Dr. Hoskins spoke of the splendid meeting that the national association held at Kansas City and emphasized particularly the loyalty and good fellowship that was created as the result of the choice of officers, the selections being so happily made as to distribute a good spirit far and wide throughout North America. He spoke particularly of the feeling that has been growing among the supporters of private schools that they were not receiving proper recognition and the selection of one of these men to serve on the executive board was particularly fitting and fortunate. Dr. Hoskins feels as do some more of us that we should advance slowly and cautiously on the

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question of preliminary educational requirements. We agree with him that while we certainly need preliminary education as do all scientific pursuits, still if advancing preliminary requirements is robbing us of the sturdy type of men, particularly practitioners, that have been the backbone and uplift of our profession, we had better consider type as well as education. The secretary read a communication from Lieut. "Louie" Griesman, now located at Camp Upton, L. I. "Louie" was evidently in good spirits and reports that they are preparing a remount station there for the care of 20,000 horses.

The literary part of the meeting being finished, the members adjourned to the hospital where a number of sick, lame and operative cases were examined and discussed.

Goshen, N. Y. J. F. DeVine.

Dr. A. B. Niven, of Crawfordsville, Ind., reports a recent meeting of the graduate veterinarians of the counties of Montgomery, Boone, Hendricks, Putnam and Fountain, at which they organized the West Central Indiana Veterinary Association to be composed of practicing graduate veterinarians only. It is expected that the county organizations will be merged into the district association after the next meeting. About fifty veterinarians were present.

WEST VIRGINIA VETERINARIANS MEET

The West Virginia Veterinary Medical Association is reported to have held the best meeting on July 5th and 6th at Parkersburg, W. Va., that has ever been held by the organization in its history. There was a record attendance comprising almost every graduate practitioner in the state and several from the neighboring state of Ohio.

Dr. H. K. Wright, of H. K. Mulford Co., gave a lecture on the manufacture and administration of anti-hog-cholera serum. Dr. L. A. Merillat, of Chicago, spoke on some of the recent improvements in veterinary surgery. He also conducted the clinic which was held at Dr. Callender's hospital. On the evening of the 5th those in attendance were treated to an automobile ride to Marietta, Ohio.

Dr. J. J. Cranwell, of Clarksburg, was elected president of the association, and Dr. Ernest Layne, of Huntington, was re-elected secretary and treasurer.

The next meeting will be held in January, the place to be decided upon by the executive committee.

Dr. G. H. Caldwell, of Morton, Ill., has moved to Bloomington, Ill., where he is erecting a two-story brick building.

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THE TIPPECANOE VETERINARY MEDICAL ASSOCIATION MEETS

This association which is composed of the veterinarians in six counties surrounding Tippecanoe County, held their first annual picnic Tuesday, September 11th, at Tecumseh Trail which is located on the banks of the Wabash about 4 miles north of LaFayette. The attendance was not large, but all had a very enjoyable time. Short talks were made just after dinner, after which the ladies went for a boat ride which had been previously arranged for them.

Before leaving for their homes all requested that we hold another picnic next year, and they would assist in swelling the crowd.

The next regular meeting of the Tippecanoe Veterinary Medical Association will be held the second Wednesday in October. Arrangements for a good afternoon clinic and a round table at one of our leading hotels in the evening will be made.

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However, Dr. Johnson's visions of success in other fields did not materialize. After he was out of the veterinary business

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The present edition has been wholly reset, its scope considerably enlarged, its discussions amplified and such changes as have been necessitated by our rapidly advancing knowledge of the subject have been made.

Veterinarians are being called upon more and more for advice and other assistance in the management of diseases in the flock; not, except rarely, to treat individual birds, but to deal with disease as it may affect the whole flock. The present need for the conservation of all food heightens the value of such service and insures a demand for the services of the veterinarian who is proficient in this branch of comparative medicine.

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for about a year he concluded that it was not so bad after all. Somewhere he conceived the idea that such a contract as he made with Dr. Madson was invalid, and without any thought of personal honor he again opened an office a few doors from the one he had sold to Dr. Madson, and where Dr. Madson was located. Dr. Madson resorted to the courts and commenced a suit to restrain Dr. Johnson from practicing in the city of Appleton.

The circuit court held that the agreement was valid and that Dr. Johnson had no right to practice or advertise himself a veterinary surgeon in the city of Appleton or vicinity. However, Dr. Johnson was not content with this, and appealed the case to the supreme court of Wisconsin.

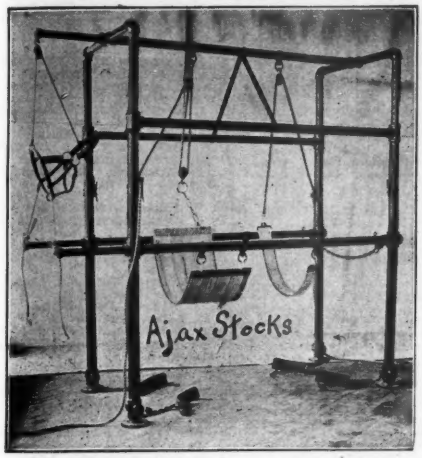
After the usual delays incident to litigation, the supreme court affirmed the lower court in the following decision by Judge Siebecker:

"It is well established that contracts imposing reasonable restraint upon the right to exercise one's calling, trade or profession are valid. This doctrine has been applied and upheld in this state under the varying facts and circumstances disclosed by the following cases: Fairbanks and others v. Leary, 40 Wis. 637; Washburn v. Dosch, 68 Wis. 436; Richards v. American Desk & Seating Co., 87 Wis. 503; Palmer v. Toms, 96 Wis. 367; Tecktonious v. Scott, 110 Wis. 441; Cottington v. Swan, 128 Wis. 321; My Laundry Co. v. Schmeling, 129 Wis. 597.

"The terms of the agreement of these parties restrain defendant from practicing his profession in 'Appleton or vicinity' unless he enters into partnership with the plaintiff for that purpose or purchases plaintiff's professional business. The significance of the word 'vicinity' in such contracts is to be ascertained from the intent of the parties to the contract in the light of the facts and circumstances of the transaction. Burton v. Douglas, 141 Wis. 110. It appears that the defendant reopened the practice of his profession in the city of Appleton, which is specifically forbidden by the contract. Courts have sustained as valid agreements of this kind without limitation as to time in specified localities. See agreements in restraint of trade (9 Cyc. 527, paragraph (4)) and note restraints limited as to space but unlimited as to time (also 6 R. C. L. sec. 205). The restraint in this agreement to the effect that defendant was not to practice his profession or calling in 'Appleton or vicinity' is reasonable and valid within the doctrine adhered to in the adjudications of this and other states.

"The order appealed from is affirmed."

Kaukauna, Wis. C. A. Frederick.



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ASSOCIATION MEETINGS

The information given below is up-to-date and has been furnished by the secretaries of the various associations listed.

Secretaries are requested to supply us data regarding their associations after each meeting; otherwise, the association will necessarily be dropped from the list. We ask secretaries to kindly co-operate with us in keeping before the members of their associations the date and place of the next meeting.

Name of Association	Date of Meeting	Place of Meeting	Secretary
Alabama Vet. Med. Assn.			C. A. Cary, Auburn, Ala.
Alumni Assn., Col. of Vet. Med., O. S. U.		Columbus, O.	W. R. Hobbs, O. S. U., Columbus, O.
Alumni Assn., N. Y. State Vet. College		New York	P. K. Nichols, Port Richmond, N. Y.
Alumni Assn., U. S. Col. Vet. Surg.	April 1918	Washington, D. C.	Chas. M. Mansfield, 1344 Newton St., Washington, D. C.
American Vet. Med. Assn.	Aug. 20-24, 1917	Kansas City, Mo.	L. A. Merillat, 1827 Wabash, Chicago.
Arkansas Vet. Med. Assn.	Jan. 1918	Little Rock, Ark.	R. M. Glover, Little Rock.
British Columbia Vet. Assn.	Sept. 21, 22, 1917	Penticton, B. C.	Kenneth Chester, New Westminster, B. C.
B. A. I. Vet. Assn. of So. Omaha	4 times a year	So. Omaha, Neb.	J. W. Giffee, c/o B. A. I., So. Omaha
California State Vet. Med. Assn.	Sept. 12	Hanford, Cal.	F. M. Hayes, Davis, Cal.
Central Canada Vet. Assn.	3rd week Jan. 1918	Ottawa, Ont.	A. B. Wickware, Experimental Farm Ottawa.
Central N. Y. Vet. Med. Assn.	Last week in June and Nov.	Syracuse, N. Y.	W. B. Switzer, Oswego, N. Y.
Chicago Vet. Society	2nd Tues. of month	Chicago, Ill.	A. A. Leibold, 4421 N. Lincoln St., Chicago.
Colorado Vet. Med. Assn.	January 24, 1918	Denver, Colo.	I. E. Newsom, Ft. Collins, Colo.
Conestoga Veterinary Club	2nd Thurs. of month	Lancaster, Pa.	H. W. Barnard, 539 E. King St., Lancaster, Pa.
Connecticut Vet. Med. Assn.	Feb. 5	Hartford, Conn.	A. T. Gillyard, Waterbury, Conn.
Eastern Iowa Vet. Med. Assn.	Dec. 13	Muscatine, Ia.	Jno. Tillie, Muscatine, Ia.
Genesee County Vet. Med. Assn.			W. J. Houden, Flint, Mich.
Genesee Valley Vet. Med. Assn.	July	Rochester, N. Y.	I. H. Taylor, Henrietta, N. Y.
Georgia State Vet. Assn.	Sept. 18, 19, 1917	Columbus, Ga.	Peter F. Bahnsen, Capitol Bldg., Atlanta.
Hudson Co. Vet. Practitioners' Club	Monthly	Jersey City, N. J.	B. D. Blair, 783 Montgomery St., Jersey City, N. J.
Hudson Valley Vet. Med. Society	Nov. 7	Millbrook, N. Y.	Wm. Henry Kelly, Albany, N. Y.
Idaho Assn. of Vet. Graduates		Boise, Idaho	C. V. Williams, Blackfoot, Idaho.
Idaho Vet. Med. Assn.	Sept. 19, 20	Nampa, Idaho	O. C. Engebretson, Burley, Idaho.
Illinois State Vet. Med. Assn.	Dec. 5, 6, 7	Chicago, Ill.	L. A. Merillat, 1827 Wabash Ave., Chicago.
Illmo Vet. Med. Assn.	Oct. 31	E. St. Louis, Ill.	L. B. McKinley, Freeburg, Ill.
Indiana Vet. Med. Assn.	Jan. 10, 11, 1918	Indianapolis, Ind.	Geo. H. Roberts, Indianapolis, Ind.
Iowa Vet. Med. Assn.		Ames, Iowa	H. B. Treman, Rockwell City, Ia.
Kansas Vet. Med. Assn.	Jan. 2, 3, 1918	Manhattan, Kan.	J. H. Burt, Manhattan, Kan.
Kentucky Vet. Med. Assn.	Sept. 13, 14, 1917	Louisville, Ky.	D. E. Westmorland, Owensboro, Ky.
Keystone Vet. Med. Assn.	2nd Tuesday of month	Philadelphia	L. B. Davis, 857 E. Girard, Philadelphia.
Lake Erie Vet. Med. Assn.	1st Tuesday in Dec.	Norwalk, O.	N. D. Backus, Elyria, O.
Los Angeles Vet. Med. Assn.	3rd Wed. of month	Los Angeles	J. A. Dell, 16th & Pacific, Los Angeles.
Maine Vet. Med. Assn.		Bangor, Me.	M. E. Maddocks, Augusta, Me.
Manitoba Vet. Assn.		Winnipeg, Man.	W. Hilton, 275 James St., Winnipeg.
Massachusetts Vet. Med. Assn.	Monthly	Quincy House, Boston	E. A. Cahill, Boston, Mass.
Michigan State Vet. Med. Assn.	1st Tues. & Wed. after 1st Mon. in February	Lansing, Mich.	W. Austin Ewalt, Mt. Clemens, Mich.
Minnesota State V. M. Assn.	Jan. 9, 10, 11, 1918	Minneapolis, Minn.	G. Ed. Leech, Winona, Minn.
Mississippi State Vet. Med. Assn.	January 8-9, 1918	Meridian, Miss.	E. S. Norton, Greenville, Miss.
Mississippi Valley Vet. Med. Assn.	July 6, 1917	Galesburg, Ill.	W. Lester Hollister, Avon, Ill.
Missouri Valley Vet. Assn.		St. Joseph, Mo.	R. F. Bourne, 1336 E. 15th, Kansas City.
Missouri Vet. Med. Assn.	Last week in July	Neosho, Mo.	C. D. Folse, 1336 E. 15th St., Kansas City
Montana Vet. Med. Assn.	Sept. 26-27, 1917	Helena, Mont.	A. D. Knowles, Missoula, Mont.
Montgomery Co. Vet. Med. Assn.	Last Fri. each month	Crawfordsville, Ind.	A. B. Niven, Crawfordsville, Ind.

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Name of Association	Date of Meeting	Place of Meeting	Secretary
Nat'l Assn. B. A. I. Employees	2nd Mon. in Aug., 1917.	Omaha, Neb.	S. J. Walkley, 135 N. W. Ave., Milwaukee.
Nebraska Vet. Med. Assn.	2nd Tues. & Wed. in Dec.	Lincoln, Neb.	S. W. Alford, Lincoln, Neb.
New York State Vet. Med. Society	July 25, 26, 27	Brooklyn, N. Y.	C. P. Fitch, Ithaca, N. Y.
North Carolina Vet. Med. Assn.		Charlotte, N. C.	J. P. Spoon, Burlington, N. C.
North Dakota Vet. Assn.	July, 1917	Fargo, N. D.	W. J. Mulrooney, Havana, N. D.
Northeastern Indiana Vet. Assn.	Oct. 9, 1917	Ft. Wayne, Ind.	R. M. Boyd, Avilla, Ind.
Northwestern Ohio Vet. Med. Assn.	Feb. 21	Toledo, O.	Paul E. Wood, Ottawa, Ohio.
Ohio State Vet. Med. Assn.	Jan. 10, 11, 1918	O. S. U. Columbus, O.	F. A. Lambert, care O. S. U., Columbus.
Ohio Valley Vet. Med. Assn.	July	Oakland City, Ind.	C. S. Henry, Terre Haute, Ind.
Oklahoma State Vet. Med. Assn.	May 3, 4	Oklahoma City	R. C. Smith, Enid, Okla.
Ontario Vet. Assn.		Toronto, Canada	H. E. Hurd, 397 Queen St., W., Toronto, Ont.
Oregon Vet. Med. Society		Probably Salem, Ore.	B. T. Simms, Corvallis, Ore.
Pennsylvania State Vet. Med. Assn.		Harrisburg, Pa.	E. H. Yunker, 2344 N. 18th, Philadelphia
Rhode Island Vet. Med. Assn.	2nd Tues. Jan.		U. S. Richards, Woonsocket, R. I.
San Joaquin Valley Vet. Med. Assn.	2nd Wed. of month	Fresno, Cal.	Jos. M. Arburua, Hanford, Cal.
Schuylkill Valley Vet. Med. Assn.	3rd Wed., June & Dec.	Reading, Pa.	C. R. Potteiger, Reading, Pa.
South Dakota Vet. Med. Assn.	Jan. 15, 16, 1918	Sioux Falls, S. D.	S. W. Allen, Watertown, S. D.
Southeastern States Vet. Med. Assn.	Dec. 27, 28, 29, 1917	Chattanooga, Tenn.	G. A. Roberts, West Raleigh, N. C.
Southern Aux. Cal. State Vet. Med. Assn.	Sept. 19, 1917	Los Angeles, Cal.	J. A. Dell, 16th & Pacific, Los Angeles.
S. W. Michigan Vet. Med. Assn.	Aug. 31	Indian Lake, Mich.	L. A. Minter, Niles, Mich.
Tenn. Vet. Med. Assn.	Nov. 7, 8, 1917	Columbia, Tenn.	F. B. Youree, Lebanon, Tenn.
Texas Vet. Med. Assn.		Ft. Worth, Tex.	E. M. Wiggs, Greenville, Texas.
Tri-County Vet. Med. Assn.	March 14	Liberty, Ind.	Geo. G. Ferling, Richmond, Ind.
Twin City Vet Med. Society	Once a month	St. Paul	C. C. Palmer, St. Paul, Minn.
U. S. Live Stock Sanitary Assn.	Dec. 3, 4, 5	Chicago	H. S. Ward, St. Paul, Minn.
Utah Vet. Med. Assn.		Logan, Utah	E. P. Coburn, Brighton City, Utah.
Veterinary Assn. of Saskatchewan	Aug. 15, 16, 17, 1918	Regina, Sask.	R. G. Chasmar, Hanley, Sask.
Vet. Med. Assn. of New Jersey		Asbury Park, N. J.	E. L. Loblein, New Brunswick, N. J.
Vet. Med. Assn. of N. Y. City	1st Wed. ea. mo. except July, Aug., Sept.	New York City	R. S. MacKellar, 351 W. 11th St., N. Y.
Vet. Med. Assn. of Geo. Washington Univ.	1st Sat. each month	Washington, D. C.	C. W. Rippon, 3115 14th St., N. W., Washington, D. C.
Vet. Med. Society Wash. State College	1st and 2nd Tues. ea. mo.	Pullman, Wash.	Claude Holden.
Virginia State Vet. Med. Assn.		Norfolk, Va.	W. G. Chrisman, Blacksburg, Va.
Washington State Vet. Med. Assn.	June, 1918	Portland, Ore.	Carl Cozier, Bellingham, Wash.
West Virginia Vet. Med. Assn.		Parkerburg, W. Va.	E. Layne, Huntington, W. Va.
Western Michigan Vet. Med. Assn.		Allegan, Mich.	C. S. McGuire, Grand Rapids, Mich.
Western N. Y. Vet. Med. Assn.	4th week, June, 1917	Buffalo, N. Y.	F. F. Fehr, 36 Prospect Ave., Buffalo.
Wisconsin Vet. Med. Assn.	Jan. 18, 19, 20, 1918	Madison, Wis.	W. A. Wolcott, Madison, Wis.
York Co. Vet. Med. Society	1st Tues. after 1st. Mon. of each month	York, Pa.	E. S. Bausticker, 325 Newberry, York, Pa.

VETERINARIANS INSTRUCT ARMY FARRIERS

A class for army farriers is being conducted at Chattanooga, Tenn., under the auspices of the Red Star Animal Relief Association. I have been officially informed that the class organized in Chattanooga was the first to take up this work, getting our authority from Dr. Gerald E. Griffin, Major, Veterinary Corps, Washington, D. C. We use as our text-book the farriers' manual and are giving the same course (with more hours), as is given the farriers by the veterinarians of the United States Army. Our first class of

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9. Hygroma of the Withers.
10. Laminitis.
11. Thumps.
12. Melanosis.
13. Chronic Polyarthritis.
14. Osteoporosis.
15. Mange.
16. Epidrosis.
17. Internal Hemorrhage.
18. Pseudo-Hysteria of Unsexed Males.
19. Permanent Internal Hydrocephalus.
20. Meningism.
21. Vertigo of Young Horses.
22. Coughs.
23. Pneumonia.
24. Acute Yellow Atrophy of the Liver.
25. Jaundice.
26. Leukemia.
27. Diabetes Insipidus.
28. Diabetes Mellitus.
29. Lupinosis.
30. Thrombotic Colic.
31. Diseases of the Heart.
32. Azoturia.
33. Transient Crural Paralysis.
34. Lymphangitis.
35. Epizootic Lymphangitis.
36. Foot Scab.
37. Foot Rot in Colts.
38. Umbilical Hernia.
39. Paralysis of the Tail.
40. Agalactia in Mares.
41. Strangles.
42. Influenza.
43. Infectious Cerebro-Spinal Meningitis.
44. Erysipelas.
45. Septicemia.
46. Malignant Edema.
47. Purpura Hemorrhagica.
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about twenty has completed the course, consisting of three lectures each week and two to three hours each night. Our second class of sixteen is now well under way. We have information from Washington that the students passing a satisfactory examination will be taken care of in our new army.

Chattanooga, Tenn. DR. F. W. MORGAN.

COUNTY AGENTS TO BE INCREASED

Plans have been made to expand immediately the co-operative extension work of the United States Department of Agriculture and the State agricultural colleges, by a large increase in the number of county agricultural agents and home demonstration agents. Women agents will be placed for the first time in the larger towns and cities. More or less technical training in agriculture and home economics will be required in this service. The appointments are to be made on the recommendation of the director of extension work at the State college. Approximately 1,400 men agents and 500 women agents are at present employed. The plans formulated contemplate the extension of the men county agent work to all the rural counties of the Union in which there is a need for the work and the placing of an additional agent in some of the larger counties already organized. They also contemplate a considerable increase in the number of women agents engaged in extension activities. The number to be employed will depend upon the number of trained men and women available. Proved ability in leadership as well as technical training will be required.

The use of city agents in the conduct of the extension work of the department is a new feature made desirable by the importance attached in the present food crisis of the world to the conservation and efficient utilization of foods. The city demonstration work will be carried on by women agents who will work in co-operation with the existing organizations of women.

The aim of the extension work is to carry directly to as many people as possible information in regard to proved methods of agricultural production and home economics. Economy in the purchase and use of food, and methods of food conservation by canning, drying, etc., will be emphasized. The men county agents are concerned chiefly with agricultural production while the women are employed in demonstration work in home economics.

With funds furnished in the food production bill the States Relation Service

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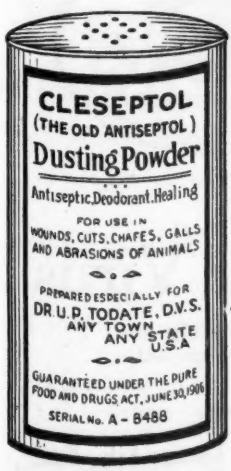

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also will seek greatly to enlarge the enrollment of young people in the boys' and girls' clubs which are devoted to increasing agricultural production and conserving the food supply through canning, drying, and other means.

The service also will work out problems in the efficient utilization of various foods and will aid institutions devoted to agricultural education to plan and conduct courses of instruction especially suited to the present emergency.

POSTAGE RATES ON LETTERS, POST CARDS AND PRINTED MATTER

The following instructions have been issued by the Department in regard to mail matter for and from the United States Expeditionary Forces in Europe:

Postmasters are informed that letters, post cards and printed matter originating in the United States or any of its possessions for transmission to the United States Expeditionary Forces in Europe are subject to the United States domestic classification, conditions and rates of postage, and that letters, post cards and printed matter originating with such forces for transmission to the United States or its possessions are likewise subject to domestic classification, conditions and rates of postage, except as modified by the provisions covering letters indorsed "soldier's letter" and contained in Section 406, Postal Laws and Regulations.

No other than United States postage stamps are valid for the prepayment of postage on matter herein described.

Mail addressed to members of the Expeditionary Forces should bear the complete designation of the division, regiment, company and organization to which the addressee belongs, as well as the name and address of the sender, and be fully prepaid by postage stamps affixed. Patrons should be instructed under no circumstances to attempt to designate on the addressed envelope the location of the unit. The correct manner of addressing such a letter would be as follows:

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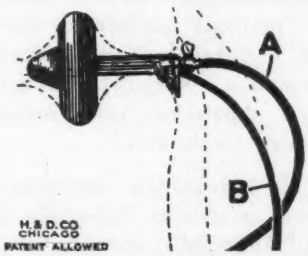

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FOOD INSPECTION DECISION 170.—SWEETENED CONDENSED MILK, CONDENSED SKIMMED MILK, SWEETENED CONDENSED SKIMMED MILK, DRIED MILK, DRIED SKIMMED MILK, AND MALTED MILK

The following definitions and standards for sweetened condensed milk, condensed skimmed milk, sweetened condensed skimmed milk, dried milk, dried skimmed milk, and malted milk were adopted by the Joint Committee on Definitions and Standards, August 7, 1916, and were approved by the Association of American Dairy, Food, and Drug Officials, August 10, 1916, and by the Association of Official Agricultural Chemists, November 22, 1916:

Sweetened condensed milk, sweetened evaporated milk, sweetened concentrated milk, is the product resulting from the evaporation of a considerable portion of the water from the whole, fresh, clean, lacteal secretion obtained by the complete milking of one or more healthy cows, properly fed and kept, excluding that obtained within fifteen days before and ten days after calving, to which sugar (sucrose) has been added. It contains, all tolerances being allowed for, not less than twenty-eight per cent (28.0%) of total milk solids and not less than eight per cent (8.0%) of milk fat.

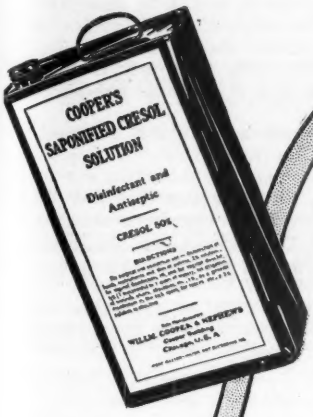
Condensed skimmed milk, evaporated skimmed milk, concentrated skimmed milk, is the product resulting from the evaporation of a considerable portion of the water from skimmed milk, and contains, all tolerances being allowed for, not less than twenty-eight per cent (28.0%) of milk solids.

Sweetened condensed skimmed milk, sweetened evaporated skimmed milk, sweetened concentrated skimmed milk, is the product resulting from the evaporation of a considerable portion of the water from skimmed milk to which sugar (sucrose) has been added. It contains, all tolerances being allowed for, not less than twenty-eight per cent (28.0%) of milk solids.

Dried milk is the product resulting from the removal of water from milk, and contains, all tolerances being allowed for, not less than twenty-six per cent (26.0%) of milk fat, and not more than five per cent (5.0%) of moisture.

Dried skimmed milk is the product resulting from the removal of water from skimmed milk and contains, all tolerances being allowed for, not more than five per cent (5.0%) of moisture.

Malted milk is the product made by combining whole milk with the liquid separated from a mash of ground barley malt and wheat flour, with or without the addition of sodium



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Leading Veterinarians inform us that it is one of their standard remedies. They tell us that it is of much assistance in checking intestinal fermentation, in relieving bloating in cattle and sheep, in destroying stomach and intestinal worms.

Cooper's Saponified Cresol is an exceedingly potent antiseptic, containing as it does, 50 per cent pure cresol. The most exhaustive tests have demonstrated conclusively that it is far more effective than phenol or creolin. It is readily soluble in water, alcohol, chloroform or glycerine. Its toxic quality is only one-eighth that of creolin. It is not an irritant, and it does not discolor or corrode instruments.

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chlorid, sodium bicarbonate, and potassium bicarbonate in such a manner as to secure the full enzymic action of the malt extract and by removing water. The resulting product contains not less than seven and one-half per cent (7.5%) of butter fat and not more than three and one-half per cent (3.5%) of moisture.

The foregoing definitions and standards are adopted as a guide for the officials of this department in enforcing the Food and Drugs Act.

D. F. HOUSTON,
Secretary of Agriculture.

Washington, D. C., March 16, 1917.

CHICAGO THE MECCA OF VETERINARIANS IN DECEMBER

As usual the first of December will bring to Chicago many veterinarians and live stock sanitarians of international reputation. The annual meeting of the United States Live Stock Sanitary Association, the semi-annual meeting of the Illinois State Veterinary Medical Association and the world renowned International Live Stock Show, all occur during the first week in December.

The meeting of the United States Live Stock Sanitary Association will be held at the La Salle Hotel, Monday, Tuesday and Wednesday, December 3rd, 4th and 5th, and the meeting of the Illinois State Veterinary Medical Association will be held at the same place Wednesday, December 5th, and continuing Thursday and Friday, the 6th and 7th. The International Live Stock Show will, as usual, be held at the Union Stock Yards throughout the week.

These gatherings have in the past been largely attended by veterinarians. It is probable that last year more veterinarians were in Chicago during these meetings than ever before ever congregated in one city at one time. The quality of the meetings and the advantages they hold out should be even more widely appreciated by veterinarians, and this year should bring together a still larger number. Every veterinarian who can possibly arrange to do so, should spend the first week of December here.

WANT A POSITION WITH THE GOVERNMENT?

The United States Civil Service Commission, Washington, D. C., will hold an examination for the position of veterinarian in the Bureau of Animal Industry on November 7, 1917. The entrance salary for this position is $1,400 per year. For application blanks and other information, address the United States Civil Service Commission, Washington, D. C.

Epizootics and Their Control During War

Miessner—Leibold

This work is invaluable for the practicing veterinarian, who serves his country as guardian of its live stock industry.

The veterinarian in military service will find the book indispensable.

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American Journal of Veterinary Medicine
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Henry county (Indiana) veterinarians held their annual meeting at Mooreland, Ind., September 19th. Dr. York, of the Bureau of Animal Industry, spoke on hemorrhagic septicemia, and Dr. George, of Knightstown, Ind., gave a talk on the breeding of draft horses.

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TETANUS IN COURT-PLASTER

The United States Public Health Report of September 7, states:

"A report just received from the Director of the Hygienic Laboratory of the Public Health Service states that out of thirteen specimens of court-plaster examined, two were found to be contaminated with tetanus bacilli. The specimens were secured from drug stores and were in original packages just as the product goes to the consumer. There is no ground for believing that the contamination was an intentional one. Whether contamination occurred during the process of manufacture through the use of infected ingredients, or subsequently by careless handling remains to be determined by further investigation.

"It was also found that court-plaster is not 'clean' in the surgical sense."

LOSS FROM WILD ANIMALS

One of the difficulties of the mountain cattleman, particularly those in Arizona and New Mexico, is the destruction of cattle, particularly young stock, by wild animals. It is estimated that in these two states 50 per cent of the calves dropped annually are destroyed by these wild animals. The U. S. biological survey estimates that each wolf will destroy 100 animals a year, each coyote fifty, each animal-killing bear 250 and each mountain lion 500. The government employs hunters on a monthly salary to kill and trap these animals. Last year there were turned in by these hunters skins to the value of $46,000, so it can readily be seen they are doing some effective work—*Twentieth Century Farmer.*

Dr. J. C. McGrath has opened an office for practice at Phoenix, Ariz.

Dr. Eugene Horton, of DeKalb, Mo., shot and killed himself at his home, September 15th.

Dr. V. H. Harris, of Ruston, La., has been appointed to the chair of anatomy at the St. Joseph Veterinary College.

Dr. Norman W. Hillock, of Columbus, Ohio, died at San Antonio, Texas, September 8th. He was commissioned as a first lieutenant in the veterinary corps, June 9th, and was on duty at Ft. Sam Houston at the time of his death. Dr. Hillock was born at Uxbridge, Canada, was forty years of age, and had resided in Columbus, Ohio, thirty-five years. He was a graduate of the Chicago Veterinary College. For a number of years he was veterinarian for the Barnum-Bailey circus. His wife, mother and two brothers survive him.

SPECIAL CATTLE THERAPY

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Author of Special Veterinary Therapy. Special Equine Therapy, Etc.

This is a valuable treatise on diseases and treatment of cattle, from a practitioner who has had unusual experience in dairy practice.

The symptoms of disease that he gives have been observed in his practice, and the treatment that he recommends has been successful in his hands. It should be in the hands of every practitioner who does any dairy practice. The paucity of literature on this subject renders a work such as this invaluable. It is new; not a compilation of the work of other writers.

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29. Parturient Paresis.
30. Rabies.
31. Effects of Partial Retention of Secundines.
32. Alopesia Areata.
33. Herpes Tonsurans.
34. Ante-partum Vaginal Prolapse.
35. Strangury from Concretions.
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BLACKLEG FILTRATE

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A New Effective Protection Against Blackleg

There is no disease of animals known in which prevention with biologics has been more widely applied than in blackleg. The good results which followed the introduction of protective inoculation are now being recognized throughout the United States and it may be safely stated that in blackleg districts a considerable proportion of animals are now being vaccinated annually. The available statistical data proves the remarkable reduction of losses from this disease, as a result of systematic vaccination.

The vaccine prepared in pellet or powder form is the outcome of early investigations on blackleg immunization by Arloing, Corvin, and Thomas, to whom the honor belongs of developing the method of immunization known as the "Lyon Method." The principle of this immunization consists in the attenuation of dried juices from blackleg lesions of an animal which has succumbed to the disease.

Kitt, in 1898, published the results of his experiments whereby he succeeded in simplifying the "Lyon Method"; his process requiring only a single injection, and he further recommended that it be made in the shoulder region where the skin is loose and easily pierced by the needle.

It must be accepted, however, that blackleg vaccine prepared in the usual pellet or powder form from attenuated blackleg meat is a comparatively crude product. Blackleg vaccine as marketed at the present time cannot be accurately standardized and a single dose may contain 100,000 or 1,000,000 spores and at other times a much smaller number. Such a variation would naturally result in irregularities of the immunizing action of the vaccine and it is no doubt due to this fact that direct losses from vaccination and deaths from the natural infection after vaccination cannot be entirely avoided. Nevertheless, blackleg vaccination as now practised has given splendid results, though complaints against the reliability of the method are now infrequent, both from veterinarian and stockman.

Realizing the shortcomings of the vaccine, investigators have been at work to develop a more uniform product which would avoid losses from vaccination and at the same time confer to the animals an effective protection against blackleg.

Attention was first directed toward developing a vaccine consisting of the attenuated cultures of the blackleg organism. Leclainche and Vallee developed a **liquid blackleg serum** which they tested out very extensively, and it is now being employed in different countries with fairly good results.

The shortcomings of the liquid blackleg vaccine must be recognized since it is subject to the same deficiencies as is the Pasteur vaccine for anthrax; viz., a careful standardization of the product is almost impossible; the keeping qualities of such a vaccine are limited; and furthermore, it is a recognized fact that the blackleg organism does not retain a uniform virulence upon artificial cultivation. These factors, no doubt, are responsible for the fact that the liquid blackleg vaccine is not attaining popularity for vaccination against blackleg.

With the advent of the development of the different immune sera for the prevention and treatment of diseases the utilization of animals for the production of **blackleg immune serum** has also been undertaken.

It is natural that the use of the serum for the control of blackleg has its limitations. The injection of an animal with serum induces a passive immunity which protects the animal for a period of less than one month.

BLACKLEG FILTRATE—LEDERLE

More recently in this country **germ-free extracts** (aggressins) have been highly recommended for immunization against blackleg, and the results from vaccination with this product are highly satisfactory and no doubt more reliable and uniform than with the blackleg pellets or with the powder. However, the cost of production of such extracts is considerable and therefore the stock owner, especially since he is accustomed to expend only a nominal sum for the products used heretofore for vaccination against blackleg, would not readily take advantage of this product.

Researches With Blackleg Filtrate—Lederle

Japanese investigators have recognized the value of immunization against blackleg with blackleg filtrate and developed the procedure to such a state of perfection that it is now almost uniformly employed in Japan.

Realizing the advantages which would follow the development of a potent blackleg filtrate, investigations were undertaken in our laboratories along the line of the Japanese method, especially since it appeared evident that a blackleg filtrate could be developed which, in its immunizing action would possess the same effectiveness as that obtained from the germ-free extract, juices of meat taken from animals affected by blackleg.

It would be impossible to describe in this short article, in detail, the method of procedure which we followed in the development of Blackleg Filtrate-Lederle, especially since a detailed description of the experimental work has been published in articles on Blackleg Filtrate-Lederle in the June issues of both the Journal of the American Veterinary Medical Association and The American Journal of Veterinary Medicine.

The tests undertaken with the filtrate proved that calves vaccinated with the product and subsequently injected with highly virulent material failed to develop the disease, whereas the control animals which were not given the filtrate, but were injected with the same amount of virulent material as the immunized animals, died of blackleg.

The dose of the filtrate as first prepared was 5cc. Since, however, it appeared advantageous to reduce this to a quantity which could be more conveniently handled, studies were made toward refining and concentrating the product. This has been successfully accomplished and in its present form a dose of 1 cc. possesses the desired immunizing properties; and besides, it is preserved in such a manner that its keeping qualities are assured for an almost indefinite period of time.

One of the great advantages of Blackleg Filtrate-Lederle is that it does not contain the blackleg germ in any form **and therefore cannot induce the disease under any circumstances.** At the same time, it possesses all of the immunity producing properties of the vaccine and Blackleg Extracts (Aggressins). **Consequently, the Blackleg Filtrate-Lederle represents a safe and effective product for vaccination against blackleg.**

Standardization

Blackleg Filtrate is accurately standardized both on cattle and guinea-pigs. Furthermore, since it represents a laboratory product the uniformity of its potency can be accurately controlled.

The Duration of Immunity

With reference to the duration of immunity produced by Blackleg Filtrate-Lederle, investigations have proved that this lasts for at least one year; that is, the same length of time as the immunity produced by the use of vaccine or germ-free extracts.

BLACKLEG FILTRATE—LEDERLE

There is no conclusive information available whereby a permanent immunity may be produced by the use of any blackleg product.

Since claims are made that certain products produce a permanent immunity, and in view of the fact that all the available scientific information on this subject indicates that up to date no product has been developed which would confer to the animals a permanent immunity, we appealed to the United States Bureau of Animal Industry for their views on this particular matter. In a letter dated June 26, 1917, the attitude of the Bureau of Animal Industry with regard to the duration of Immunity from different blackleg products, was expressed as follows:

> "Referring to your letter of the 7th instant, concerning the duration of the period of immunity conferred by the use of blackleg germ-free extract (Aggressins) as compared with the immunity following the use of blackleg filtrate, you are advised that we are not in a position to say that the immunity conferred by the use of either of these products is permanent. It is probable that this immunity may last a comparatively long period, but we agree with your statement that there has not been sufficient time as yet to say with accuracy that a permanent immunity is conferred, and had advised certain manufacturers of blackleg Aggressin accordingly, prior to receipt of your letter."

Method of Administration and Dosage

Blackleg Filtrate-Lederle is administered subcutaneously and preferably in the neck, midway between the head and shoulder, using an ordinary hypodermic syringe which has previously been sterilized. At the point of injection the skin should be thoroughly cleansed with a suitable antiseptic solution.

Blackleg Filtrate-Lederle—is marketed in a concentrated form of which 1 cc. doses will afford sufficient immunity to the cattle to protect against the natural infection for a period of about a year—that is, for the same length of time as the immunity established by vaccine or by germ-free extract.

Animals To Be Vaccinated

Calves as a rule should not be vaccinated until they are six months old. Animals over two years old are seldom affected, and the mortality among them is so small as to make vaccination unprofitable. Calves between six months and two years of age should be subjected to the vaccination.

Time To Vaccinate

The time for vaccinating depends largely upon circumstances. In the different parts of the country there is a distinct blackleg season, and the proper time for vaccination is just before the arrival of this season. The disease, however, is mostly prevalent during the spring and fall months.

BLACKLEG FILTRATE—LEDERLE

Packages

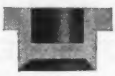

Fig. No. 1

Fig. No. 2

Fig. No. 3

BLACKLEG FILTRATE-Lederle is supplied in the special Lederle vial designed in our Laboratories with the object of giving the maximum of protection to the product as well as rendering its use convenient for the veterinarian. A brief description will demonstrate the advantages of this vial:

Figure No. 1 shows a cross section of the stopper employed in this package. It will be noted that a diaphragm of rubber, easily pierced by a hypodermic needle, completes the seal.

Figure No. 2 shows the vial with the stopper in place, the vial having been filled and stoppered under aseptic conditions in the laboratory. The stopper is securely sealed to the vial and is not to be removed.

Figure No. 3 shows the vial in the hands of the operator and demonstrates the manner in which the filtrate is removed from the vial. After moistening the top of the rubber stopper with an antiseptic solution, the operator partly withdraws the piston of his syringe, then inserts the needle through the diaphragm in the stopper. He then forces the air in the syringe into the vial and upturning the vial as in Figure 3, the filtrate will flow into his syringe. When the required amount has been removed from the vial, the needle is withdrawn and the opening made by the needle will close, effectively sealing the vial. This operation may be repeated as often as desired.

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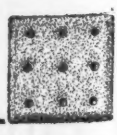

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AMERICAN JOURNAL OF VETERINARY MEDICINE

9 South Clinton Street, **Chicago, Ill.**

The Pennsylvania State Live Stock Sanitary Board on October 7th announced the appointment of Dr. T. E. Munce, deputy state veterinarian, as acting state veterinarian in the absence of Dr. C. J. Marshall, state veterinarian, who has been appointed a major in the army veterinary corps. The board also granted leaves of absence to Dr. R. M. Staley, chief of the Division of Disease, who has been commissioned a major, and Dr. William Brod, state live stock representative at Lancaster, who has received the commission of lieutenant.

Dr. J. R. Pooley, who has been in the government employ for the past three years as meat inspector, has been assigned to hog cholera control work in Iowa. He will make his headquarters at Cedar Rapids and have charge of eradication work in the counties of Linn, Jones and Cedar.

Veterinarians of Adams, Wells and Huntington counties, Indiana, formed the A. W. H. Veterinary Association at Bluffton, Ind., September 19th. The association will meet regularly on the third Wednesday of each month.

Jasper, widely known and advertised as the "dog who could think like a man," and starred in George M. Cohan's comedy, "Young America," died at Chicago, September 28th. The dog had earned $75,000 for his manager, Dixie Taylor, during the last seven years. As a vaudeville performer he had traveled around the world many times. The Smithsonian Institute made a study of him, and his unusual display of intellect was said to be nothing short of marvelous.

Dr. Peter Snell has moved from Grand Rapids to Petoskey, Mich., where he will take over the practice of Dr. Maurice Blue, who has joined the veterinary corps at Camp Custer, Battle Creek, Mich.

OUR PURPOSES

The purposes of the United States in this war are known to the whole world, to every people to whom the truth has been permitted to come. We seek no material advantage of any kind. We believe that the intolerable wrongs done in this war by the furious and brutal power of the Imperial German Government ought to be repaired but not at the expense of the sovereignty of any people—rather a vindication of the sovereignty both of those that are weak and those that are strong. * * * Peace must be based upon justice and fairness and the common rights of mankind.—*From President Wilson's Reply to the Pope.*

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President and Manager

J. L. Cherry
Chief Veterinarian

Dr. J. V. Jewell recently moved from Webster City to Cedar Falls, Iowa, where he has purchased the practice of Dr. Claude F. Cox, who has joined the army veterinary corps.

Dr. Charles W. Smith, of Westfield, N. Y., died September 25th. He was born at Busti, N. Y., May 17, 1853, and had practiced veterinary medicine for forty years.

Dr. L. O. Henrich moved from Vacaville, Cal., to Corcoran, Cal., October 5th.

Dr. Silas A. Ireland, of Carthage, Ill., died at his home, September 22nd.

The Missouri State Veterinarian's office has been moved from Columbia to Jefferson City, Mo., where it occupies a splendid suite of rooms in the new capitol.

Dr. F. M. Cahill, of St. Joseph, Mo., was married in Chicago, to Miss Elizabeth Cahill, of Appleton, Wis., October 13th.

Dr. George Fitchett, of Chandler, Mich., died suddenly on September 22nd, at the age of 57 years.

At a meeting of the Chicago Veterinary Society, October 9th, Dr. Geo. P. Frost was elected president and Dr. J. B. Jaffray, secretary.

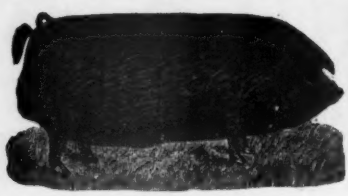
Dr. Frank H. McNair, of Berkeley, Cal., was elected secretary-treasurer of the state milk and dairy inspectors who formed an organization at Santa Rosa, Cal., September 27th.

The Northwestern Veterinary Association held a meeting at Sioux City, Iowa, October 4th. A clinic was conducted at the hospital of Dr. G. P. Statter, where Dr. H. E. Bemis, of the Iowa State College, demonstrated several operations. The following officers were elected: Dr. G. A. Johnson, of Sioux City, president; Dr. Charles Parks, of Moville, vice-president; Dr. William Hodan, of LeMars, secretary and treasurer.

Dr. Louis N. Peterson, of Westville, Ind., was recently appointed veterinary inspector at the Gainesville, Florida, experiment station.

Dr. E. S. Brashier, formerly of Chicago, has accepted a position as teacher in the veterinary department of the Iowa State College, Ames, Iowa.

U. S. Veterinary License No. 32



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